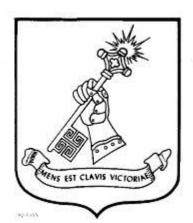# COMPARING THEORY AND PRACTICE: AN APPLICATION OF COMPLEXITY THEORY TO GENERAL RIDGWAY'S SUCCESS IN KOREA

A Monograph
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   Complexity theory has attracted considerable interest from operational artists in recent times. However, because it is still an emerging field, there are few – if any – historical case studies that show how complexity applies to military operations. Using the comparison method, this review compares the similarities and differences between a historical case study and insights from complexity theory in order to evaluate the utility of complexity theory for military practice. The first three months of Lieutenant General Matthew Ridgway's command of the Eighth Army during the Korean War is chosen for the historical case study, as an exemplar of successful operational command. Complexity theory is compared with how Ridgway understood, perceived, and approached the complexity of his operational environment.

   Complexity theory offers broad guidelines for action, such as: use simple rules to generate complex behavior; look at the system from multiple scales to gain better perspective; achieve a holistic picture of the situation by recognizing interdependence; and continually adapt to a changing environment. The comparative analysis shows good agreement between these recommendations of complexity theory and Ridgway's successful campaign. A significant implication of this research is that complexity theory and history can be complementary perspectives for appreciating operational art. Leaders who understand complexity theory as well as military history may be better prepared for the challenges they will face in an uncertain future.

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Abstract

Comparing Theory and Practice: An Application of Complexity Theory to General Ridgway's Success in Korea by MAJ Eldridge D. Browne, U.S. Army 62 pages.

Complexity theory has attracted considerable interest from operational artists in recent times. However, because it is still an emerging field, there are few – if any – historical case studies that show how complexity applies to military operations. Using the comparison method, this review compares the similarities and differences between a historical case study and insights from complexity theory in order to evaluate the utility of complexity theory for military practice. The first three months of Lieutenant General Matthew Ridgway's command of the Eighth Army during the Korean War is chosen for the historical case study, as an exemplar of successful operational command. Complexity theory is compared with how Ridgway understood, perceived, and approached the complexity of his operational environment.

Complexity theory offers broad guidelines for action, such as: use simple rules to generate complex behavior; look at the system from multiple scales to gain better perspective; achieve a holistic picture of the situation by recognizing interdependence; and continually adapt to a changing environment. The comparative analysis shows good agreement between these recommendations of complexity theory and Ridgway's successful campaign. A significant implication of this research is that complexity theory and history can be complementary perspectives for appreciating operational art. Leaders who understand complexity theory as well as military history may be better prepared for the challenges they will face in an uncertain future.

Table of Contents

Introduction

"In theory there is no difference between theory and practice. But, in practice, there is."
—Jan L.A. van de Snepscheut

The quiet rumble of the Constellation Engine allowed Lieutenant General Matthew Ridgway to relax and reflect on the task of taking over the Eighth Army, an assignment bestowed on him the day prior by Army Chief of Staff, General Lawton Collins. The new Eighth Army Commander's challenges were numerous: transitioning command after the accidental death of his predecessor; improving morale for an army in full retreat pursuant to the Chinese entrance in the war; addressing the varying agendas of multiple countries; overcoming coalition troops that were poorly trained, equipped and led. Any misstep by Ridgway could trigger a political situation that might well be the catalyst for World War III. Although the situation seemed extremely complex and daunting, Ridgway came up with a deceptively simple plan. He would improve morale by going on the offensive, and impose his leadership to change the dynamics of the battlefield.[1]

This paper compares complexity theory and military theory, and presents a case study to identify historical evidence of practice consistent with complexity theory. Due to space limitations, this monograph only touches on the evidence practice consistent with complexity theory by looking at one narrow historical case study of Lieutenant General Matthew Ridgway during his first three months in command of the Eighth Army. In order to conduct a detailed comparison of theory and practice, the scope of this monograph is also narrowed to a very specific time period. During such a brief study, it would be impossible to develop conclusive recommendations on the usefulness of complexity theory to battle command. However, it is an important first step in exploring a topic that has so far been largely neglected by complexity theorists.

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[1] Steven Eden, *Transformational Leadership in Wartime* (Carlisle, PA: U.S. Army War College, 2004), 19-20.

What can be learned from a comparison of complexity theory and the Battle Command[2] process as performed by Lieutenant General Ridgway, during his first three months as the Eighth Army Commander during the Korean War? There is a significant body of research into the field of complexity theory. Applications of complexity theory to Battle Command, specifically the commander's role, also exist.[3] However, there have been limited studies on the application of complexity theory to Battle Command using a historical perspective. The significance is that a historical case study provides an empirical grounding for the emerging insights from complexity theory. This monograph's hypothesis is that comparative analysis between the case study of Lieutenant General Ridgway in the Korean War and complexity theory will provide insights into how theory and practice are interrelated in understanding, visualizing, describing, directing, leading, and assessing in complex situations. History offers insights into the past to understand the linkages to the present, but is not a predictor of the future. Rather, history provides experiences, skills and wisdom, which practitioners can draw on when taking action to influence the future.[4]

Study of the past may be used to understand complexity by connecting the dots of the past to those of the present. Current and future commanders can look to the example of a successful commander who was able to adapt to the ever changing environment of a diverse, interdependent, and connected battlefield. A historical case study enables readers to examine actions that have occurred in the past and observe their second and third order effects that may be traced through an understanding of the environment. Carl von Clausewitz suggested using history as a tool, to provide a lens for critical analysis

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[2] As of November 2010, Battle Command is still apart of U.S. Army doctrine. However, the Army is moving to incorporate Battle Commands components of understand, visualize, describe, direct, learn and assess under the commander's role within Mission Command.

[3] David P. McHenry, *Battle Command: An Approach to Wickedness* (Fort Leavenworth, KS: US Army Command and General Staff College, 2009), 5.

[4] John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (Oxford; New York: Oxford University Press, 2002), 11.

involving the "tracing of effects back to their causes."[5] Historical analysis will always be incomplete, since human beings have biases, different worldviews, and can only understand the past from the limited perspective of the written record, possibly missing key events that occurred. What is not captured in the historical case studies or in the study of history is exactly what was going on in a person's mind that caused them to make certain decisions and what conditions in the environment were changing. Therefore, a reader has to infer from historical records what those decision makers were thinking. However, Clausewitz identified the value of history as its ability to "clarify everything and also provide the best kind of proof in the empirical sciences."[6] He identified four distinct uses of history for the military profession. Within this monograph the focus will be on Clausewitz's second use of history, which is the "application of an idea" to show the true details of the idea and to illustrate the "difference between theory and practice."[7]

This monograph is divided into five sections. Section one introduces the subject matter and explains why it continues to be relevant. Section two introduces the history of the Korean War in brief and the decisions made before Lieutenant General Ridgway took command of the Eighth Army. A discussion of Lieutenant General Ridgway's background and education provide context for the decisions he made during his command of the Eighth Army. Following this is a discussion on Ridgway's entry into the war and the winning strategies he introduced. Section three will elaborate on complexity theory and military theory. Section four will compare the case study with insights from complexity theory and examine similarities and differences between theory and practice. Section five provides a summary and recommendation from the study.

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[5] Christopher Bassford, "Clausewitz and His Work," Army War College, http://www.clausewitz.com/readings/Bassford/Cworks/Works.htm (accessed 10/2, 2010).

[6] Carl von Clausewitz, *On War*, trans. Ed. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 170.

[7] The other three types of historical examples that Clausewitz sites as different ways of looking at history are as follows. First, a historical example may simply be used as an explanation of an idea...Third, one can appeal to historical fact to support a statement…to prove the possibility of some phenomenon or effect… Forth, the detailed presentation of a historical event. Clausewitz, *On War*, 171.

The relevant audiences for this monograph are leaders at all levels and doctrine writers who want to understand how complexity theory applies to military operations. This study will also enable the reader to see the value of complexity theory and provide a set of key insights for coping with complex situations. This monograph is only a starting point for applying complexity theory to real world situations. The military is the primary audience; however, leaders from government, business, and society will gain a greater understanding of the application of complexity theory to historical case studies. Carl von Clausewitz gives provides useful advice on the proper relationship between theory and practice:

> The insights gained and garnered by the mind in its wanderings among basic concepts are benefits that theory can provide. Theory cannot equip the mind with formulas for solving problems, nor can it mark the narrow path on which the sole solution is supposed to lie by planting a hedge of principles on either side. But it can give the mind insight into the great mass of phenomena and of their relationships, then leave it free to rise into the higher realms of action.[8]

Theory gives practitioners a way to think through problems and interrelationships, not a set of rules to follow slavishly on the battlefield. Peter Checkland a leading systems thinker uses a model that shows the relationship between theory and practice which includes four parts. Broken down, the model consists of the framework of ideas (theory), which leads to the method of implementation (practice) that deals with the application of these ideas (the real world) and finally what is learned from these three concepts to improve the overall process.[9] This monograph looks at the utility of comparing complexity theory to practice to see if the framework of complexity is useful as a tool to the practitioner.

Before moving forward with the monograph, it would be useful to define how complexity theory, military theory, and practice will be used throughout this paper. Since all of these concepts have multiple definitions and meaning with in different disciplines, this monograph will focus on explinations that are relevant to the case study from key authors with in each field.

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[8] Ibid., 578.

[9] School for Advanced Military Science *Art of Design: Student Text Version 2.0* (Fort Leavenworth, KS: US Army Command and General Staff College, 2010), 7.

In this monograph, complexity theory will be defined as a system of interdependent, interconnected, diverse varying parts, and have emergent properties. However, there are some sub components of complexity that affect each of these components and they are scale, simplicity, adaptation, and feedback. This definition is a combination derived from Alex Ryan definition of complex systems, which is "the essence of complexity is related to the amount of variety within the system, as well as how interdependent the different components are."[10] Axlrod and Cohen offer another definition in their book *Harnessing Complexity* "complexity indicates that the system consists of parts which interact in a way that heavily influences the probabilities of later events. Complexity often results in features, called emergent properties, which are propeties of a system that the separate parts do not have."[11]This combination encompasses the major components from across multiple disciplines within the study of complexity theory, which are interdependence, interconnectedness, variety, diversity, and emergence. The sub components are important because they enable us to deal with complexity through scale, making the complex simple, feedback from the system allows us to learn, and adaptatation.[12]

Military theory could be defined as all things military. The SAMS *Art of Design: Student Text* defines theory as a "highly compressed insight into how something works, theories are tools that provides practitioners with a great source of leverage."[13]Carl von Clausewitz insights into theory define it as a tool to look at absolutes as a means of criticism based real world experiences.[14] Military theory will be defined in this monograph as current and past doctrine (FM 5-0, FM 3-0, & FM 6-0), current military theory, and military theory that Ridgway would have been exposed to that dealt with concepts of complexity theory.

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[10] Alex J. Ryan, "The Foundations for an Adaptive Approach: Insights from the Science of Complex Systems," *Australian Army Journal*, VI, no. 3 (2010), 71.

[11] Robert M. Axelrod and Michael D. Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (New York: Basic Books, 2000), 15.

[12] These subcomponets come from a host of different sources from Gaddis dealing with scale, Stephen Wolfram who showed how complexity can be made simple, and from the SAMS *Art of Design: Student Text Version 2.0* feeback and adaptation as a means of learning from the system inorder to improve it.

[13] SAMS, *Art of Design: Student Text Version 2.0*, 33.

[14] Clausewitz, *On War,* 157

Practice is defined as the use of Battle Command while conducting operational art to make decisions on the battlefield in a complex environment. Battle Command is the current framework which defines how a commander understands the environment and the problem he has been given, visualize how to solve the problem, describe an approach, execute the plan, learn from it and finally make an assessment to evaluate his approach. Within this monograph the focus of Battle Command will be on how the commander understands and visualizes the battlefield. FM 5-0 defines it as "how commanders, with support from their staffs, drive the operations process through battle command—the art and science of understanding, visualizing, describing, directing, leading, and assessing operations to accomplish missions."[15]

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[15] *FM 5-0: Operations Processes* (Washington, D.C.: U.S. Department of the Army, 2010), v.

The Korean War and General Ridgway

"A study of the laws of war is necessary as we require to apply them to war. To learn is no easy matter and apply them in practice is even harder; some officers are excellent at paper exercises and theoretical discussions in the war colleges, but when it comes to battle there are those that win and that lose."

—Mao Tse-tung, *On the Study of War*, 1936

In order to give context to the historical case study of General Ridgway we must first look at what happened during the Korean War prior to his arrival. General Ridgway's background, experiences, and education are surveyed to help understand why he made key decisions during his first four months in command in Korea. This allows us to better appreciate how he saw the battlefield complexities as he took command of the Eighth Army. According to John Gaddis history elevates the perspective of the reader, through expanding there experiences and horizons, thus gaining them a different kind of practice to inform their future decisions.[16]

The Beginning of the Korean War

"If there is any necessity for Congressional action, I will come to you. But I hope we can get those bandits in Korea suppressed without that."
—President Harry S. Truman, to members of Congress, June 30, 1950

"We thought the North Koreans would back off once they saw American uniforms."
—Phil Day, Task Force Smith

Any historical narrative of war falls short of capturing its full complexity. A summary of what happened in the Korean War will provide the framework within which Lieutenant General Matthew Ridgway was forced to operate in at the time of his arrival. The challenges Ridgway faced in Korea included cultural diversity, interdependent causal effects across the full spectrum of national power, and how these effects were connected to the events that preceded Lieutenant General Ridgway's arrival in South Korea.[17]

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[16] Gaddis, *The Landscape of History: How Historians Map the Past*, 4.

[17] Eden, *Transformational Leadership in Wartime*, 17.

Neither the United States government nor the military was prepared for The Democratic People's Republic of Korea's (DPRK) attack on the Republic of Korea (ROK) in June 1950.[18] The U.S. military was ill-equipped, poorly trained, and poorly funded after World War II. Their primary task was to act as a police force around the world in order to slow the growth of communism. Joseph Goulden summed up the predicament best; "In the space of four days in June 1950, after the North Korean People's Army (NKPA) swept into South Korea, President Harry S. Truman and Secretary of State Dean Acheson put the United States into a war that the American military was unprepared to fight and in fact had been told it would not have to fight."[19] Both the government and the military were preparing for World War III and had not anticipated fighting small wars because they believed the threat of nuclear warfare would prevent these types of conflicts.[20] Thus, even though the government was looking at containing the spread of communism, they were wholly unprepared to commit troops in an expeditionary role.[21] Congress wanted to reduce military spending in order to finance large new civilian domestic programs that were popular with American voters and which would ensure the incumbents' re-elections. Many commanders and leaders within the government anticipated sending forces to fight a conventional war much like World War II.[22]

The South Korean government under President Syngman Rhee was not prepared for a conflict with North Korea. The government was a fledgling democracy still trying to find itself. South Korea's military was ill-equipped, untrained, and reliant on extensive support from the United States. President Rhee was struggling with a corrupt and inadequate government, which faced a formidable opponent in

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[18] Joseph C. Goulden, *Korea: The Untold Story of the War* (New York: Times Books, 1982), 53-55.

[19] Ibid., xvi.

[20] D. Clayton James and Anne Sharp Wells, *Refighting the Last War: Command and Crisis in Korea, 1950-1953* (New York: Free Press, 1993), 3-4.

[21] Ibid.

[22] Ibid.

North Korea under Kim Il Sung. The NKPA had been trained and equipped by the Russians and were far superior to their South Korean counterparts.[23]

At 0400 on June 25, 1950, the NKPA launched a full-scale attack on South Korea. Initially, this aggression was thought to be just another probing attack by the NKPA along the border, since these had been occurring for several months. The ROK military along the border was no match for the DPRK Army and quickly began retreating. "Outnumbered in troop strength, firepower, and equipment, ROK Armed Forces could only retreat and retreat again on all fronts."[24]

The Joint Chiefs of Staff, State Department, Far East Commander, and commanders on the ground who were to fight the Korean War focused on fighting the last war and containing the spread of communism throughout the world while preventing a nuclear conflict.[25] The containment of communism was such a high priority of the U.S. Government that a defense budget of $50 billion was quickly approved at the outbreak of the Korean War.[26] According to James and Wells, General Douglas MacArthur approached the Korean War in the same manner that he fought the Pacific War. "Douglas MacArthur's mindset about the Pacific War heavily influenced the strategic course during the first year of fighting in Korea, when battlefield conditions were still fluid."[27] MacArthur believed that air power and overwhelming fire superiority would enable the U.S. military to overcome any shortfalls it had in training and manpower. The general, like many officers at the time, underestimated the capabilities of the NKPA and overestimated the ROK Army and American military units in the Far East command that were brought in to defend South Korea. One of MacArthur's failings was that he only surrounded himself with people who had served with him during World War II, which created tension with his subordinates that

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[23] Korea Institute of Military History, *The Korean War* (Seoul, Korea: Korea Institute of Military History, 1997), 160-163.

[24] Ibid., 164.

[25] James and Wells, *Refighting the Last War: Command and Crisis in Korea, 1950-1953*, 15-17.

[26] Walter A. McDougall, *Promised Land, Crusader State: The American Encounter with the World since 1776* (Boston: Houghton Mifflin, 1997), 165.

[27] James and Wells, *Refighting the Last War: Command and Crisis in Korea, 1950-1953*, 4.

were not part of his inner circle. His Chief of Staff, Lieutenant General Ned Almond, played a dual role,

doubling as the X Corp Commander, which operated separately from the field army (Eighth Army) under

Lieutenant General Walton "Johnnie" Walker. Almond's duel assignment caused friction in the Far East

Command and a lack of unity within the command and control (C2) structure in Korea.[28]

Lieutenant General Walton "Johnnie" Walker was struggling to conduct an orderly withdrawal

of U.S. forces and South Korean forces without the proper resources and manpower. Since in many cases

units retreated without good cause, their commander was left frustrated.[29] Walker was dealing with the

loss of key leaders (Divisional, Regimental, and Battalion Commanders and staff), equipment, weapons,

and manpower shortages as he tried to retreat in good order.[30] Walker was fighting a delaying action

while he awaited reinforcements to arrive on the Korean Peninsula. MacArthur requested that all

available forces, including the U.S. military's strategic reserve, be sent to Korea under the Far East

Command. Lieutenant General Matthew Ridgway, Deputy Army Chief of Staff, was tasked with

providing forces to Korea without stripping the U.S. of its military capability to respond to a Soviet

attack.[31] He was forced to assemble a piecemeal response force from the meager active Army units, and

to call on the National Guard and the Reserves to bolster forces in Korea. Ridgway had to remind many

within the Joint Chiefs of Staff (JCS) that MacArthur's problems were local and that there were still many

other threats around the globe to worry about, especially the Soviet threat in Europe.[32]

After the Eighth Army's retreat from Seoul, the NKPA continued pushing the Americans

further south during July and early August. The United Nations had authorized a UN force, which

included American troops, to disarm North Korea. Because Cold War competition with America was

heating up at that time, Russia urged the North Koreans to resist surrender by any means necessary. The

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[28] Clay Blair, *The Forgotten War: America in Korea, 1950-1953* (New York: Times Books, 1987), 121.

[29] Goulden, *Korea: The Untold Story of the War*, 173.

[30] Blair, *The Forgotten War: America in Korea, 1950-1953*, 141.

[31] Ibid., 121.

[32] Ibid., 123.

NKPA made the mistake of splitting its forces in the vicinity of Taegu instead of massing forces and capitalizing on a weak coalition force lead by the U.S. This blunder enabled the Eighth Army to retreat intact south towards Pusan.[33] MacArthur gave Walker instructions to stop the retreat, suggesting that the Eighth Army was expendable and regardless of how many men perished, they must fight or die: there would be "no Korean Dunkirk."[34] The Eighth Army withdrew south of Taegu and finally halted the North Korean advance just north of Pusan along the Naktong River.

By mid August, The Eighth Army was receiving badly needed replacements and equipment, and had secured a perimeter around Pusan. Reinforcements rolled into the Pusan perimeter and eventually gave Walker twice the combat power that the NKPA had around Pusan.[35] Both sides began to regroup and conduct attacks designed to break the will of the other side. MacArthur started planning for the breakout of the Pusan perimeter with a flanking attack along the Korean Peninsula.[36] Interestingly, the Chinese warned Kim Il Sung that the Americans in Japan were planning an amphibious landing some place on the Korean peninsula. Based on their intelligence and MacArthur's history the Chinese guessed the attack would be at Inchon.[37] Kim did not act on this intelligence, confident that he was on the verge of victory in the vicinity of Pusan.

On September 15, 1950, General MacArthur conducted a high-risk amphibious landing at Inchon, just west of Seoul, with the X Corps, a composite of Marines and Army units. This strike was against the counsel of the Joint Chiefs of Staff, a decision that despite the success of this daring strike, MacArthur would later regret.[38] The North Korean People's Army was caught by surprise and had to act against a force that was about to cut NKPA's lines of communication, while also dealing with the Eighth

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[33] Ibid., 163-164.

[34] Goulden, *Korea: The Untold Story of the War*, 174.

[35] Blair, *The Forgotten War: America in Korea, 1950-1953*, 181.

[36] Goulden, *Korea: The Untold Story of the War*, 183.

[37] David Halberstam, *The Coldest Winter: America and the Korean War*, 1st ed. (New York: Hyperion, 2007), 304-306.

[38] Goulden, *Korea: The Untold Story of the War*, 209-210.

Army's attempt to get out of the Pusan perimeter. The Eighth Army had problems breaking out of the Pusan perimeter because of a lack of equipment, limited firepower, difficult terrain, and heavy North Korean resistance. Lieutenant General Walker was quoted as saying the Eighth Army was "ready to break loose if it weren't for the physical trouble."[39] Walker's frustration with the resources redirected towards the landing at Inchon was evident: "They expended more ammunition to kill a handful of green troops at Wolmi-do and Inchon than I've been given to defeat ninety percent of the North Korean Army."[40] The North Korean People's Army was able to hold in place around the Pusan perimeter until the weather cleared and air power broke their will to fight, at which point they abandoned their equipment and retreated north.[41] Interestingly, one of MacArthur's strongest supporters in the Pentagon, especially after the Inchon landing, was Lieutenant General Matthew Ridgway.

MacArthur began pushing his forces north after the capture of Seoul because he believed the only solution to the Korean War was the destruction of the North Korean regime and unifying the country under a single government.[42] The strategy that MacArthur employed to achieve his goal was to have the Eighth Army, under Lieutenant General Walker, attack west of Seoul across the 38th parallel and capture the North Korean capital, Pyongyang. Meanwhile, Lieutenant General Almond would attack northwest, leading X Corps in an amphibious landing at Wonsan on the east coast of North Korea. MacArthur sold his plan to the JCS by emphasizing that only Republic of Korea (ROK) troops would operate 100 miles north of the 38th parallel with UN forces supporting them along the 38th parallel.[43]

Major General Charles Willoughby, MacArthur's G2, "effectively announced the end of the war" on October 20, 1950, as UN forces continued to push North Korean forces further and further up the

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[39] Ibid., 224.

[40] Halberstam, *The Coldest Winter: America and the Korean War*, 309.

[41] Goulden, *Korea: The Untold Story of the War*, 224.

[42] Ibid., 233.

[43] Ibid., 240.

peninsula.[44] Military Intelligence did not know that Mao Ze Dong planned to send two million Nationalist Chinese soldiers to fight U.S. troops in Korea. Captured during China's Civil War, these soldiers were suspected to be loyal to Chang Kai Sheik. China's leader wanted the United States to kill these men and take the blame, to consolidate his own power without getting too much Chinese blood on his hands.[45] Mao had been planning the Korean intervention as a means to show the world they were a force to be reckoned with.

MacArthur made two mistakes, firstly that he continued his attack north, and secondly underestimating the Chinese will to fight a western army, which also extended his supply lines and rendered them vulnerable to attack. Chinese volunteers were already closing in on UN Forces as they streamed across the Yalu River and headed south, unknown to U.S. forces because they hid by day and moved at night. Second, maintaining a command and control structure with the X Corps separated from the Eighth Army both by authority and terrain as they continued their push for the north meant that U.S. forces could not use their full force in a fight. MacArthur did not anticipate being attacked by the Chinese since he thought that he was merely fighting the NKPA. Had MacArthur known what he was truly facing he would have slowed the U.S. troops' northern advance so that reinforcements and artillery could constantly support them. In addition, he stretched his authority by giving orders for a rapid advance for new objectives along the North Korean border with China.[46] Walker thought that Lieutenant General Ned Almond would relinquish command of X Corps and go back to being MacArthur's Chief of Staff, and then the X Corps would have fallen under the Eighth Army fighting units uniting them under one command.[47] However, this was not the case in Korea, which caused C2 and unity of command issues.

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[44] Ibid., 251.

[45] Jung Chang and Jon Halliday, *Mao: The Unknown Story*, 1 American ed. (New York: Knopf, 2005), 340-373.

[46] Goulden, *Korea: The Untold Story of the War*, 256.

[47] Blair, *The Forgotten War: America in Korea, 1950-1953*, 330.

In early October, the CIA warned that the Chinese might send forces across the Yalu River to protect their resources in Manchuria, but MacArthur willfully ignored this warning.[48] He met with President Truman on Wake Island on October 15, 1950 and told the President that the war would be over shortly and that he was confident the Chinese would not intervene.[49] MacArthur continued pushing forces north toward the Chinese border with the Eighth Army in the west and X Corps in the east. MacArthur and his staff ignored evidence from prisoners, the CIA, and the Chinese themselves that they were not merely going to protect their border, but that they fully expected to push UN forces completely out of Korea.[50] Another intelligence failure was that UN intelligence did not discriminate between NKPA forces and Chinese forces. Because the two forces had totally different tactics, techniques, and procedures, UN forces wrongly anticipated the course of action of the enemy they were facing.[51]

Chinese Communist Forces (CCF) crossed the Yalu River and began attacks on UN forces (specifically ROK forces) on December 25, 1950, leading to the destruction of several ROK units and initiating a massive push against other UN forces along the Chinese border.[52] Not since World War II had Coalition forces been considered "combat ineffective" or simply absent.[53] MacArthur and Willoughby both dismissed reports of CCF attacks along the border.[54] MacArthur believed that if the "CCF intervened in North Korea, his air power would 'slaughter' the Red Chinese."[55] The entire Eighth Army and X Corps were caught by surprise and in many cases, the CCF destroyed whole units. The UN forces at the time were roughly equal to 200,000 troops, including the ROK units assigned to each of the major

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[48] Goulden, *Korea: The Untold Story of the War*, 259.

[49] Ibid., 268.

[50] Eliot A. Cohen, John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 1 ed. (New York, Vintage Books, 1991), 171.

[51] Cohen and Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 177.

[52] Goulden, *Korea: The Untold Story of the War*, 286.

[53] Cohen and Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 168.

[54] Goulden, *Korea: The Untold Story of the War*, 288.

[55] Blair, *The Forgotten War: America in Korea, 1950-1953*, 392.

commands.[56] Lieutenant General Walker began to realize the full impact of the CCF attacks and did

everything he could to maintain control of units under his command as they began to retreat. Intelligence

from Chinese prisoners of war allowed the Eighth Army to see that it was not up against a ragtag group of

guerrillas, but about five full field armies of nearly 100,000 men each. The UN forces were outmanned.[57]

A lull in the fighting in November caused MacArthur to think that he could stop CCF forces with air

power and continue his push to achieve victory. Walker and the Eighth Army were cautious about

resuming attacks and even Lieutenant General Matthew Ridgway, studying battlefield maps at the

Pentagon, concluded that the Eighth Army's flanks were exposed, and MacArthur's plan was flawed.[58]

Once the Eighth Army commenced its attack in late November, it met stiff resistance and ultimately units

began to falter, causing Lieutenant General Walker to reevaluate his goal of reaching the Yalu River in

order to save the Eighth Army from destruction.[59] MacArthur ordered Lieutenant General Almond to

support the Eighth Army. This distressed Almond, because he saw Walker's failure as an opportunity for

X Corps to reach the Yalu River first achieving the success that MacArthur wanted.[60] The CCF continued

to push south almost destroying X Corps in the Chosin Reservoir and the Eighth Army to the west. Much

of the Eighth Army was badly damaged in the retreat, specifically, the 2nd and 9th infantry divisions.

Walker was worried that the Eighth Army would be routed if they had to defend Pyongyang so he ordered

a withdrawal to the Imijin River.[61] X Corps was able to evacuate via Hungnam under continuous pressure

from the CCF. This evacuation came even after taking severe losses in the Chosin Reservoir to the 7th

Division and the 1st Marine Division. These units had landed on the East Coast and fought their way north

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[56] Ibid., 366-367.

[57] Goulden, *Korea: The Untold Story of the War*, 295.

[58] Ibid., 330.

[59] Ibid., 343.

[60] Blair, *The Forgotten War: America in Korea, 1950-1953*, 416-417.

[61] Ibid., 502-503.

only to be rewarded with a morale destroying retreat when overwhelmed by superior forces.[62] The

Marines resented the way that Lieutenant General Almond employed their forces and requested that a

Marine officer be sent in to lead them.

Lieutenant General Walker was killed on December 22, 1950 in a car accident. Although on

many occasions he had been close to being fired, he had managed to keep the Eighth Army from utter

destruction, and maintained its ability to fight while working within a broken command structure.[63]

Lieutenant General Ridgway was at home at Fort Myer when he received word from General Lawton

Collins, the Chief of Staff of the Army, that Ridgway was being placed in command of the Eighth Army

and would be on his way to Korea two days later.[64]

General Ridgway

Ridgway was walking into a complex ill-structured problem,inheriting a demoralized Eighth

Army.[65]The command was not unified and the coalition was splintered. In addition to the military

problems, he had to deal with refugees, a broken South Korean government, and weak leadership within

his own ranks. Ridgway had the daunting task of "winning over his own force of approximately 365,000

troops from various countries fighting under the UN banner … Listening to his troops gripe … his first

impressions were not good."[66] He would have to rely on his education, experiences, and his intuition to

solve the crisis he had been thrust into.

It was no accident General Ridgway was picked to succeed General Walker as the commander

of the Eighth Army, since MacArthur, the Joint Chiefs of Staff, and the President considered him one of

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[62] Robert J. Dvorchak and Associated Press, *Battle for Korea: The Associated Press History of the Korean Conflict* (Conshohocken, PA: Combined Books, 1993), 151.

[63] Goulden, *Korea: The Untold Story of the War*, 424-425

[64] Ibid., 426-428.

[65] Ill-structured problems are the most interactive. They are also complex, nonlinear, and dynamic— and therefore the most challenging to solve. *FM 5-0: The Operations Process* (Washington, D.C.: U.S. Department of the Army, 2010), 2-4.

[66] Dvorchak and Associated Press, *Battle for Korea: The Associated Press History of the Korean Conflict*, 159.

America's top combat leaders.[67] Although anti-communist, he was a leader who understood that the Korean War was a secondary effort to European initiatives (Cold War) and that he would have to win using a United Nations coalition force with limited resources and within existing political constraints.[68] Ridgway's relentless drive, force of personality, keen understanding of the crisis situations he was thrust into, and his leadership style of leading from the front while moving to the sound of the guns made him the right man for the job.[69]

General Ridgway's Background

Matthew Bunker Ridgway came from a military family and was "…born on March 3, 1895 at Fort Monroe, Virginia, where his father, Thomas Ridgway, was serving as an Army Battalion Commander of the field artillery."[70] Ridgway learned how to adapt in any environment and learned to handle guns at an early age, which would serve him well in his future career.[71] The Ridgways were a typical military family, moving all over the country based on different assignments. This constant change allowed Matthew Ridgway to become very adaptive, but hurt him scholastically.[72]

Matthew followed in his father's footsteps and applied to West Point on a Presidential appointment, but failed to make the first cut due to a weakness in math. Through determination and long hours of study, Ridgway was accepted on his second attempt. As a cadet, the future general became involved with the football team as their manager, which kept him physically active. However, horseback riding, another of his extracurricular activities, almost ended his military career when he fell off a horse

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[67] Halberstam, *The Coldest Winter: America and the Korean War*, 486.

[68] Ibid., 488.

[69] Ibid.

[70] George C. Mitchell, *Matthew B. Ridgway: Soldier, Statesman, Scholar, Citizen* (Mechanicsburg, PA: Stackpole Books, 2002), 3.

[71] Mitchell, *Matthew B. Ridgway: Soldier, Statesman, Scholar, Citizen*, 6.

[72] Matthew B. Ridgway and Harold H. Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 1st ed. (New York: Harper, 1956), 22.

and severely injured his back. This injury plagued him for the rest of his career.[73] West Point enabled

Ridgway to make acquaintances with many future leaders as well as enabled him to assess his peers'

talents and capabilities throughout his career.[74] He graduated from West Point in 1917 as an infantry

officer and was prepared to go to Europe to fight World War I.

Ridgway served his first year in the Army along the Mexican border with the 3rd Infantry

Regiment (the oldest unit in the Army) in Texas. This assignment provided the young Lieutenant the

basics of being a leader. He was soon promoted to Second Lieutenant and given command of a

company.[75] Fluent in Spanish, Ridgway was sent to West Point to teach in 1918, causing him to miss

combat duty during WWI. He taught French, Spanish and tactics for six years.

During the inter-war period, Ridgway held many different positions that would impact his

future commands. After he left the Infantry Company Commander's Course at Fort Benning, he was sent

to Tientsin, China where he commanded a company of the 15th Infantry Regiment. While there, Ridgway

met Lieutenant Colonel George C. Marshall, the regimental commander, who would have a huge impact

on his career.[76] This assignment is the first place that Ridgway gained an understanding of the Eastern

way of warfare and where he learned to adapt to the environment by exploiting the potential inherent in a

situation.

After serving his tour in China, Captain Ridgway returned stateside to serve as a company

commander in the 9th Infantry, in San Antonio, and also competed as an Army pentathlete. However,

shortly after his return he was asked to become a military assistant to General Frank McCoy, to supervise

free elections in Nicaragua.[77] Working with McCoy as his mentor and learning to interface with local

governments would serve him well in the leadership positions he assumed during WWII and the Korean

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[73] Ibid., 24-26.

[74] Ibid., 27-28.

[75] Ibid., 30-32.

[76] Ibid., 35.

[77] Ibid., 37.

War. It is here that Ridgway observed and gained a profound respect for the U.S. Marines in action, through their ability to fight as they conducted operations against rebels in the area.[78] During his years of service in South America, Ridgway made a name for himself as a leader who could get things done. After leaving General McCoy, he went on to the advanced course at Fort Benning Georgia where he learned not to fight the problem but deal with it through simplicity.[79] Ridgway approached many of the problems throughout his career in a manner that was easy to understand, regardless of how complex the situation was.

In June of 1930, Ridgway completed the Advanced Course for Infantry Officers at Fort Benning, Georgia. He then was assigned as a technical advisor on military matters to the Governor-General, Theodore Roosevelt Jr., in the Philippines from 1932 to 1933.[80] This assignment instilled in Ridgway a great understanding of how to work with indigenous forces. In 1934 and 1935, he attended the Command and General Staff College (CGSC) at Fort Leavenworth, Kansas. Following this, he served as assistant Chief of Staff, G3, and Sixth Corps Area of the Second Army in Chicago, Illinois, working again for his mentor General McCoy. He went to the Army War College (AWC) and graduated in 1937. At the War College, he honed his skills as a strategic thinker. He then served as Assistant Chief of Staff, G3, with the Fourth Army as war broke out in Europe. Because of his vast experience in Latin American affairs earlier in his career, he earned an assignment in 1939 with Brigadier General Marshall on a special mission to Brazil. Their goal was to gain support from Brazil in the event of a war with Germany.[81] Ridgway closed the inter-war period at the War Plans Division (WPD) of the Department of War,

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[78] Ibid., 38-39.

[79] Ibid., 41.

[80] Ibid., 42-43.

[81] Ibid., 47-48.

working long hours in preparation for the inevitable war. He came into the WPD as a Major and left as a Brigadier General, during this "critical period for war planning in the transition from peace to war."[82]

In February of 1942, Ridgway was made Assistant Division Commander for the 82nd Division under General Bradley. Both Ridgway and Bradley believed that units with high *esprit de corps* could accomplish any mission given to them. Ridgway assumed command of the 82nd after Bradley took over another division. He was told to convert the 82nd into an Airborne Division. To accomplish this changeover the rookie commander led by example, making jumps himself to inspire his men and instill confidence in themselves as well as their leader.[83] Parachute and glider training further enhanced the 82nd Airborne Division's capabilities and eventually the Division was split up to form the 101st Airborne Division.[84] The 82nd Airborne Division continued their training until they left for North Africa. Ridgway commanded the 82nd Airborne Division in North Africa, Italy, and Normandy. He made a combat jump with the division on D-Day and shortly thereafter, he gave up this command to take charge of the XVIII Airborne Corps. World War II would be the first time that Ridgway saw combat and he distinguished himself as one of the best Corps and Division commanders in the European Theater. He proved his courage, competence, and character under fire, earning the respect of all those who served with him.[85] Ridgway was always where the action was, so much so that even General Patton once told one of his staff officers, "that Ridgway has his CP up where his outpost ought to be. Tell him to get back." Ridgway took this as a compliment coming from General Patton.[86] He was not afraid of telling superiors that they were wrong even at the risk of his career: his number one concern was always that of the soldier. When asked if it was okay for a commander not to follow orders, Ridgway said that it was the responsibility of the commander, at the risk of his own career, to inform his superior of any error in judgment and what an

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[82] Henry G. Gole, *The Road to Rainbow: Army Planning for Global War, 1934-1940* (Annapolis, Md.: Naval Institute Press, 2003), 78.

[83] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 54-56.

[84] Ibid., 61.

[85] Mitchell, *Matthew B. Ridgway: Soldier, Statesman, Scholar, Citizen*, 20-23.

[86] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 74.

alternate course of action could be, but at the end of the day to follow their orders.[87] He would tell

General Sir Harold R. L. G. Alexander, the commander of allied troops in Italy that it was not a good idea

for the 82nd Airborne Division to jump into Rome because the conditions were not present for their

success. History proved him right when the jump, which would have spelt doom for the 82nd Airborne

Division, was canceled just hours before being executed, and it would take another seven months for

ground forces to reach Rome.[88] Based on his successes in the European Theater Ridgway was picked to

serve as the XVIII Airborne Corps Commander for the invasion of Japan, but the war ended before he

could be moved to the pacific theater of operations.[89]

Ridgway served on several different staffs and commands after WWII including Commander in

Chief for the Caribbean. General Ridgway also served as the Deputy Chief of Staff of the Army for

Operations and Administration between 1949 and 1950 prior to being given command of the Eighth

Army in December of 1950. The position of Deputy Chief of Staff of the Army for Operations and

Administration enabled him to keep abreast of all the ongoing operations around the world and

specifically in Korea, which would be his next assignment.[90] After serving as the Eighth Army

commander, Ridgway was promoted to the Far East Commander when President Truman fired General

MacArthur. He eventually went on to serve as the Supreme Allied Commander Europe (SACEUR) and

finally became the Chief of Staff of the Army before retiring. Ridgway dabbled as a scholar and

statesman once he left the military, working with such institutions as the Carnegie Endowment for

International Peace, while staying active with military and foreign affairs until his death in June, 1993.[91]

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[87] Roy Edgar Appleman, *Ridgway Duels for Korea*, 1st ed., Vol. 18 (College Station: Texas A&M University Press, 1990), 22.

[88] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 81-83.

[89] Halberstam, *The Coldest Winter: America and the Korean War*, 490.

[90] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 192-194.

[91] Mitchell, *Matthew B. Ridgway: Soldier, Statesman, Scholar, Citizen*, 181-204.

General Ridgway's Education

Much of what Ridgway knew about military theory was learned at West Point and Leavenworth. Strategy and doctrine that was taught at West Point and later at Fort Leavenworth's Command and General Staff Collage (CGSC) focused on principles of war, which one author indicated were based on Jomini's writings about war that had influenced American doctrine in the early 1900's.[92] Specifically, what had affected Ridgway were Jomini's principles of war, the focus on the offense, and the qualities of a General. However, Ridgway was also influenced by new doctrine that came out supporting Clausewitz's *On War*.[93]

A remarkable document to come out of Leavenworth in the thirties was *Principles of Strategy for an Independent Corps or Army in a Theater of Operations*. Written in 1936 this text was remarkable because of the obvious influence of Clausewitz, the clarity in expression of operational concepts, and the analysis of the impact of modern warfare on operations within a theater.[94]

Clausewitz was not only one of the foremost and earliest theorists with an intuitive grasp of complexity, but he also allowed students of his theories of war to gain a greater holistic understanding of the environment they were operating in and their ability to visualize the "tactical importance of terrain analysis when planning and conducting tactical operations."[95] While most theorists emphasize the differences between Clausewitz and Jomini, there are also significant similarities between Clausewitz and Jomini's writings, as both were influenced by the same Napoleonic campaigns.[96]

General Maxwell D. Taylor, an Army War College (AWC) graduate and peer of Matthew Ridgway's said that Leavenworth turned out well-trained future Commanders and General Staff officers,

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[92] Appleman, *Ridgway Duels for Korea*, 21.

[93] Colonel Michael R. Matheny, *The Roots of Modern American Operational Art* (Army War College, Carlisle, PA: U.S. Naval War College), 13.

[94] Ibid.

[95] Gregory D. Reilly, *Battlefield Visualization: We can't Get There From Here* (Fort Leavenworth, KS: US Army Command and General Staff College, 1997), 10.

[96] Christopher Bassford, "Jomini and Clausewitz: Their Interaction," http://www.clausewitz.com/readings/Bassford/Jomini/JOMINIX.htm (accessed 10/3, 2010).

"all speaking the same professional language, following the same staff procedures, schooled in the same military doctrine, ready to work together smoothly in any theater of war."[97] Ridgway attended the last two-year course at Fort Leavenworth, where he learned combined arms mobile warfare, a strategy that exploited breakthroughs on a stabilized front as the dominant tactical principle during the interwar period.[98] The school saw no reason to change doctrine during this period, but modified it based on emerging science and technology.[99] One of the primary goals of CGSC was to enable students to creatively and critically think through problems, while gaining confidence in dealing with difficult military situations, and make informed decisions.[100] Leavenworth honed these skills in its students through complex practical exercises that focused on identifying and solving problems. CGSC, in the late 1930s, spent one third of its time on solving practical problems that helped build its student's ability to understand and visualize the battlefield.[101] Of the critical skills Ridgway learned during this period were map exercises and terrain walks that helped him visualize the battlefield three dimensionally.[102] The Command and General Staff College (CGSC) focused on teaching students the operational art of managing large units, problem solving, and decision-making at the Division, Corps, and Army level in order to "function as a commander or staff officer in combined problems."[103] The next critical steps in Ridgway's career were his operational assignments that led him to the top Army school, the Army War College (AWC), which focused on theory and strategy at the national level.

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[97] Gole, *The Road to Rainbow: Army Planning for Global War, 1934-1940*, 125.

[98] Peter J. Schifferle, *America's School for War: Fort Leavenworth, Officer Education, and Victory in World War II* (Lawrence, Kansas: University Press of Kansas, 2010), 36-39.

[99] Ibid., 47.

[100] Ibid., 62-63.

[101] Reilly, *Battlefield Visualization: We can't Get There From Here*, 28.

[102] Ibid., 24-25.

[103] Schifferle, *America's School for War: Fort Leavenworth, Officer Education, and Victory in World War II*, 65.

The Army War College provided Ridgway with an opportunity for introspection and the ability to think strategically while working with coalition partners.[104] The school also had a great working relationship with the Army General Staff and worked real world problems for them.[105] It also encouraged students to think and attack problems unconstrained by real world limitations, which allowed them to think critically and creatively.

Certainly part of General Ridgway's education came from his experiences on the battlefield. Lieutenant Colonel Julian H. Burns in his monograph on the *Education of Matthew Ridgway in Generalship* argues that it takes a lot more to become a successful general in combat at the operational level than to be a mere tactician:

> The general cannot concern himself solely with tactics and the direction of battles. He operates in a realm far more complex. He must translate political guidance, stated and unstated, into operational realities. As such, he operates in a milieu of conflicting cultural, economic, and diplomatic requirements. Mutual interests…cooperation among comrades on the coalition battlefield…Further, personalities and inter and intra-governmental in-fighting among and between U.S. agencies or Services.[106]

The mistakes under combat conditions that Ridgway made during World War II gave him the experience to adjust his actions during the Korean conflict when he took command of the Eighth Army. He struggled initially to know what level he should command from: the tactical or the operational. This confusion is evident in his inability to effectively control his forces in Sicily or in Normandy.[107] As the XVIII Airborne Corps commander, he learned to work with coalition partners, use his staff to translate his orders, and work with subordinates at headquarters that were unwilling to go on the offensive, all of which served him well in his role as the Eighth Army Commander in Korea six years later.[108] Ridgway sometimes got so involved at the tactical level leading by example that he missed the big picture. He was

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[104] Gole, *The Road to Rainbow: Army Planning for Global War, 1934-1940*, 130-131.

[105] Ibid., 122.

[106] Julian H. Burns Jr, *The Education of Matthew Ridgway in Generalship* (Carlisle Barracks, PA: Army War College, 10 Feb 1989), 9.

[107] Burns, *The Education of Matthew Ridgway in Generalship,* 11-22.

[108] Ibid., 23-28.

successful because of his ability to assess the problem he was facing, his use of his staff, his aggressive attitude, his conduct of personal reconnaissance to see emerging trends, and his ability to be at the decisive point to lead by example by being up front with the soldier as he was during the CCF offensive in January 1951.

General Ridgway's Command of the Eighth Army

All of his educational experiences helped to "instill in him the ability to take over in battle in a time of crisis."[109] Lieutenant General Ridgway flew across the Pacific Ocean to take stock of the crisis he was walking into: the army commander was dead; the tactical situation was bad; and soldier morale was low.[110] He relied on his principles, education, and combat experience to guide him as the Eighth Army Commander. As Deputy Chief of Staff for Operations, he knew all the commanders in the Eighth Army. He also had excellent situational awareness, from daily resource issues to what was needed on the battlefield in order to win.[111] Ridgway was keenly "…aware that he was in charge of the most precious kind of national resource – the lives of young men who were dear to their parents…all lives on the battlefield are equal."[112]

The new commander first met with MacArthur to get a situational update, and then proceeded to Korea to assume command and meet his staff. Finally, he visited the battlefield to meet his commanders and their men and hear firsthand how they felt.[113] After General MacArthur had briefed him, he asked "General, if I get over there and find the situation warrants it, do I have permission to attack?" General MacArthur replied "do what you think is best, Matt, the Eighth Army is yours."[114]

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[109] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 199.

[110] Ibid., 199.

[111] Halberstam, *The Coldest Winter: America and the Korean War*, 491.

[112] Ibid., 490.

[113] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 199-200.

[114] Ibid., 201.

The first thing he did was to send a message to the Eighth Army from Tokyo conveying his condolences for John Walker's death and expressing what a privilege it was to work with such a capable unit. He then boarded a B-17 for Korea. On the way there, he had the pilots fly over the Korean countryside so he could see where the Eighth Army was fighting and make an assessment of the terrain.[115] He landed at Seoul, where his advanced command post (CP) was located and immediately went to visit Ambassador Muccio and President Rhee. He told the President "Mr. Pres., I am glad to be here. And I have come to stay."[116] In addition, "he also asked the President for as many Korean laborers as could be made available for work on the defenses of Seoul… indeed thousands of Koreans reported for work the next day."[117] Ambassador Muccio described what he thought was the most dangerous area in Korea: the central corridor (Hongchon-Wonju-Chechon corridor) that ran straight down the middle of the country. This challenging area allowed the CCF to make a flanking attack on UN forces.[118] For the next three days, Ridgway visited front-line units and got a bottom-up assessment of the situation the Eighth Army was in. Their new leader was deeply concerned about the morale, uncertainty, and nervousness, so much so that it felt like all the soldiers were "looking over their shoulder" for the impending doom.[119] Feedback from his staff did not brighten the outlook either. In an intelligence briefing there was a big circle drawn on a map with the number 174,000 indicating the enemy disposition and strength, north of where Eighth Army units were positioned. This briefing highlighted a lost sense of urgency and insufficient knowledge about where the enemy was located. These failures were mostly due to limited reconnaissance and contact with enemy forces.[120] The Eighth Army Ridgway inherited was a hollow Army made up of replacements and

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[115] Ibid., 203.

[116] Ibid., 204.

[117] Appleman, *Ridgway Duels for Korea*, 10.

[118] Ibid., 9.

[119] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 204-205.

[120] Billy Mossman, *Ebb and Flow, November 1950-July 1951* (Washington, D.C.: Department of the Army, Chief of Military History, 1990), 183.

draftees with poor discipline morale, and leadership.[121] It was clear in his assessment that the troops were lacking in the basics of combat such as patrolling, personal reconnaissance, and leadership. Further, their confidence, aggressiveness, and eagerness to fight had vanished.[122] He did not want to immediately fire any of the leadership. Rather, he would give them a chance to improve, because as he saw it, commanders were detached from their soldiers with their command post well behind the frontlines.[123]

He immediately expressed the following areas for improvement to his commanders and soldiers: stronger intelligence gathered from patrolling; a better understanding of the terrain; the use of firepower (air and artillery); supply discipline (meaning not abandoning equipment); and leadership from the front. Eighth Army commanders would be expected to be with their frontline units where the action was the hottest.[124] He sent a letter to the Eighth Army explaining to them why they were fighting in Korea stating:

> In the final analysis, the issue now joined right here in Korea is whether Communism or individual freedom shall prevail; whether the flight of fear driven people we have witnessed here shall be checked, or will at some future time, however distant, engulf our own loved ones in all its misery and despair.[125]

Ridgway additionally insisted that all units maintain contact with one another and be mutually supporting; commanders had to "anticipate where a crisis would occur…[and] be there in person to take personal charge if necessary."[126]He added that he cherished the lives of his soldiers and would not venture into fruitless attacks that would cost lives.[127] Ridgway was not afraid to fire subordinates or staff officers who were not capable and competent.[128] He also believed that military leaders should: share the hardships

[121] Cohen and Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 183-186.

[122] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 205.

[123] Mossman, *Ebb and Flow, November 1950-July 1951*, 183.

[124] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 206-207.

[125] Ibid., 208.

[126] Appleman, *Ridgway Duels for Korea*, 18.

[127] Ibid., 17-18.

[128] Ibid., 19.

and hazards of their men; lead from the front; never ask their men to do something they themselves wouldn't do; and be present at the point of an anticipated crisis.[129]

Ridgway anticipated a CCF offensive and began preparing his command for an all-out offensive from the Chinese in the beginning of the New Year. He earned the nickname "wrong way rigidly" because he wanted to turn and attack north.[130] Based on intelligence reports Lieutenant General Ridgway anticipated the Chinese attacking down one of the old invasion routes in Korea straight to the heart of Seoul and along the central corridor where the UN forces were the weakest. Ridgway immediately ordered the 2nd Infantry Division and the 7th Infantry Division, followed by the X Corps, into the central corridor in preparation for CCF attack.[131] This redeployment was to bolster the ROK III Corps prior to moving them to the east where the frontline was a little bit more stable due to the rugged terrain.[132] The Eighth Army was thinly spread along its frontline trace. It was dealing with refugees, constant enemy pressure, and the environment. Intelligence on the impending attack was extremely poor. All of it was focused on the CCF IX Army Group assembled in the Wonsan-Hungnam area and not across the entire Eighth Army front.[133] About 500,000 refugees were reported to be moving south from Seoul and the Inchon area, which clogged lines of communication for UN forces moving north.[134] Ridgway came to the consensus that the Eighth Army could not hold north of the Han River because of lack of fighting morale and strength.[135] The Joint Chiefs Staff denied his request to open a second front; he even requested the Chinese Nationalist forces on Formosa to attack the Chinese mainland to open a second front against the CCF.[136]

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[129] Ibid., 21.

[130] Ibid., 19.

[131] Ibid., 25-26.

[132] Mossman, *Ebb and Flow, November 1950-July 1951*, 185.

[133] Appleman, *Ridgway Duels for Korea*, 29-30.

[134] Ibid., 29-34.

[135] Ibid., 29-34-35.

[136] Ibid., 29-35-36.

The attack came on New Year's Eve all along the UN front. The Chinese army was well prepared for the attack and easily penetrated the Republic of Korea Army (ROKA) lines, pushing the UN forces back. [137] Ridgway moved up to the frontline to observe the situation for himself, only to find Republic of Korea (ROK) soldiers fleeing south en masse. It was so bad that Ridgway had to talk to President Rhee and ask him to speak to the ROK soldiers, which he did, stopping the ROK exodus.[138]

Lieutenant General Ridgway quickly realized he could not take the offensive and would have to retreat to his line of defense south of Seoul; however he made it very clear to his Corps commanders he did not want the retreat to be a purely administrative move and that pressure should be placed on the enemy through aggressive counterattacks.[139] Ridgway tried to make a stand north of Seoul, but due to constant pressure from the CCF, he was forced to withdraw south of the Han River.[140] General Ridgway had to deal with moving his force of about 75,000 men and equipment that was north of Seoul across the Han River, along with more than 200,000 refugees, while maintaining contact and doing retrograde operations: a very complex task.[141] He was displeased with the performance of the Eighth Army, which had allowed Seoul to be retaken by the CCF and had poor morale.[142] The retreat of the Eighth Army caused many within South Korea, including the Far East command and the JCS, to think that the UN forces would pull out via Pusan.[143]

The CCF was stopped 15 miles south of the Han River and UN forces began patrolling and conducting reconnaissance and probing attacks on the Chinese lines. Ridgway had seen that the Eight Army was capable of fighting if he could change their spirit from defeated to aggressive and "offensive-

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[137] Ibid., 42-51.

[138] Ibid., 52.

[139] Mossman, *Ebb and Flow, November 1950-July 1951*, 187.

[140] Appleman, *Ridgway Duels for Korea*, 58.

[141] Mossman, *Ebb and Flow, November 1950-July 1951*, 198-208.

[142] Appleman, *Ridgway Duels for Korea*, 91.

[143] Ibid., 92-94.

minded."[144, 145] In addition, he assessed that his center of gravity was the spirit of the Eighth Army, while

the CCF's center of gravity was their light infantry's ability to fight a mobile war.[146] Ridgway also knew

he had the ability to choose the time, the terrain, and how he would take the fight to the enemy.[147] He

relieved Corps and Division commanders to get results and requested that General Collins only send the

highest quality aggressive officers to serve in Korea.[148] The means he chose to regain the initiative was by

taking the offensive through aggressive reconnaissance and forcing the enemy to react to his action. His

Airborne mindset of fighting while surrounded and taking the fight to the enemy would help design

Ridgway's first offensive. Halberstam describes how Ridgway outlined his battle philosophy to one of his

commanders, Colonel John Michaelis:

> "Michaelis, what are tanks for?" he asked.
> "To kill, sir."
> "Take your tanks to Suwon," Ridgway said.
> "Fine, sir," Michaels answered. "It's easy to get them there. Getting them back is going to be more difficult because they [the Chinese] always cut the road behind you."
> "Who said anything about coming back?" Ridgway answered. "If you can stay up there twenty-four hours, I'll send the division up. If the division can stay twenty-four hours, I'll send the corps up."[149]

The Chinese leadership was unaware that they were facing a totally different coalition force and

that the environmental conditions in which they were operating had changed dramatically.[150]

Due to the lack of information on Chinese movements, General Ridgway made a personal

reconnaissance trip behind enemy lines. What he found was an enemy that had halted to regroup and take

shelter from the harsh weather conditions. With the benefit of this new intelligence, Ridgway devised a

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[144] Mossman, *Ebb and Flow, November 1950-July 1951*, 228.

[145] Ibid., 209.

[146] Halberstam, *The Coldest Winter: America and the Korean War*, 496.

[147] Ibid., 500.

[148] Mossman, *Ebb and Flow, November 1950-July 1951*, 234.

[149] Halberstam, *The Coldest Winter: America and the Korean War*, 502.

[150] Ibid., 502.

short attack dubbed Operation Killer to get the Eighth Army into the offensive spirit.[151] On the morning

of January 25, 1951, Ridgway ordered the Eighth Army to conduct an attack north.[152]

The attack continued into February with the Eighth Army recapturing Seoul. The Chinese

counterattacked unsuccessfully back and forth until the end of March when the Eighth Army crossed the

38th parallel. The Eighth Army had regained its fighting spirit and the offensive initiative. This forced the

Chinese to come to the negotiating table. In Ridgway's opinion, the Eighth Army could have pushed the

CCF all the way into Manchuria. However, it was his belief that the UN forces would be best served by

stopping its forward movement beyond the 38th parallel, because any further advances would have

overextended its supply lines and tripled its battle front, and the Americans would have to increase the

size of the military force in Korea significantly.[153]

As the fighting continued along the 38th parallel and peace talks with the Chinese began, the

Eighth Army settled into defensive positions while they waited for a political settlement to the fight. On

11 April 1951, General MacArthur had been relieved as the Far East Commander by President Truman

and Ridgway was sent from Korea to replace him as the new Commander. Lieutenant General Van Fleet

was given command of the Eighth Army.[154] In less than four months, General Ridgway orchestrated a

metamorphosis that saw the Eighth Army go from suffering low morale and a defeatist attitude to an army

that not only had the enemy on the run but also forced them to the negotiating table. With their morale

strong and fighting spirit intact, they were ready to pull out of Korea. This is a perfect example of a

commander who understood and visualized the battlefield's complexity and applied his experience and

leadership to direct his army to victory.

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[151] Mossman, *Ebb and Flow, November 1950-July 1951*, 301.

[152] Ridgway and Martin, *Soldier: The Memoirs of Matthew B. Ridgway*, 215-216.

[153] Ibid., 219-220.

[154] Ibid., 220.

Complexity Theory and Military Theory

"Simplicity does not precede complexity, but follows it."

—Alan Perlis

"If you know the enemy and know yourself, you need not fear the result of a hundred battles. If you know yourself but not the enemy, for every victory gained you will also suffer a defeat. If you know neither the enemy nor yourself, you will succumb in every battle."

—Sun Tzu

Within this section, this monograph will define complexity theory as seen from multiple perspectives and show why it facilitates understanding of the environment. This monograph will focus on the components of complexity theory that mirror Ridgway's understanding of the environment, his perceptions that formed his decisions, and the approach he took. The paper will then look at military theory through looking at doctrine on Battle Command as a means of practice. The military theory section focuses on Carl von Clausewitz as a theorist that Lieutenant General Ridgway would have been familiar with that had a complexity intertwined within his concepts. This will enable a comparison of complexity theory to Battle Command as practiced by Ridgway in the next section of this monograph.

Complexity Theory

"Everything should be made as simple as possible, but not simpler."

—Albert Einstein

"If you want truly to understand something, try to change it."

—Kurt Lewin

Complexity theory is still an emerging science, which crosses multiple domains and fields of study with no one true definition.[155] This monograph is indicative but not inclusive of all the different components of complexity theory. It is specifically focused on the elements that highlight the theory within the case study. Complexity is nonlinear, has high information content, and no regularity. However, it does have emerging structure and creates patterns that can be understood through the different

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[155] Axelrod and Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier*, 16.

components of complexity theory. They include interdependence, connectedness, diversity, and adaptive learning systems.[156] Complex systems are unpredictable, are often robust to certain perturbations, create emergence from the bottom up, and exhibit novel behaviors at different scales.[157] In addition, these components form an open system that is constantly changing due to the environment, where each element changes based on feedback from the system, and reaction to emergent phenomena.[158]

Defining Complexity Theory

Within this section, complexity will be defined as seen by different theorists; then based on the case study; and finally clarified by grouping the key components of complexity as they relate to the case study. The three categories used for analysis are: understanding the environment in which Ridgway operated, his perspective of events, and the approach he took.

Complexity theory is a systems approach that largely follows in the tradition first established under the name of general system theory. Ludwig von Bertalanffy, the father of general system theory, said that a system is defined as "sets of elements standing in interrelation" to form a whole structure.[159] He also said general system theory will "provide an alternative foundation for unifying science, which he proposed in reaction to the reductionist mechanistic worldview."[160] In addition, general system theory advocated that the relationship between organizations or living systems and the environment make the system complex and interdependent. Bertalanffy distinguished between open systems in which the environment is constantly changing how individual parts interact with one another, and closed systems

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[156] Scott E. Page. *Understanding Complexity,* DVD, directed by Scott E. Page (Chantilly, Virginia: The Teaching Company, 2009), Chap 2.

[157] Ibid.

[158] Neil Johnson, *Simply Complexity: A Clear Guide to Complexity Theory* (Oxford, England: Oneworld Books, 2007), 14-15.

[159] Ludwig von Bertalanffy, *General Systems Theory: Foundations, Development, Applications* (New York: Braziller, 1993), 38.

[160] Alex J. Ryan, "A Multidisciplinary Approach to Complex Systems Design" (Discipline of Applied Mathematics, The University of Adelaide, 2007), 56.

with no outside input to the interactions, which allows them to be modeled as mechanistic entities.[161] One of the most important contributions Bertalanffy made was that he showed that systems formed patterns, behaved in certain ways, and had certain properties irrespective of the composition of the parts, which enabled the interdisciplinary study of the dynamics of complex systems. General system theory lays the groundwork for complexity theory as the basis for all systems to interact as autonomous parts that make a whole, but which individually cannot explain the whole. The SAMS student text provides this warning: "we should always remember that it is our thinking that is systemic, not the world itself."[162]

In defining complexity for someone who is not familiar with the theory it is useful to differentiate between complicated which has parts that lead to a whole and complex were parts when put together do not make up a whole system. One must understand that complicated systems are not adaptive but may be diverse. Alex Ryan makes the following distinction between complex and complicated:

> Complicated problems are problems where the 'devil is in the details' and the details are best managed by decomposing the problem into smaller pieces. Complex problems are caused by variety and interdependence, cross multiple scales and generate novelty. They resist solution by templating and trying to break them up ignores interdependencies, generating unintended consequences.[163]

Alex Ryan and Daniel Bilusich argue that complex systems, which are nonlinear with interacting feedback loops, are approached in a different way than complicated systems, which are linear and can be broken down into simple parts.[164] In order to define complexity even further, nonlinear interacting feedback loops caused by unpredictability seek different paths based on input into the system and cannot be determined through observation.[165] Complex problems cannot be solved using techniques that are successful for complicated problems.[166] Lastly, it is possible to control and predict complicated systems, whereas, complex systems contain feedback and the capability to adapt or learn, causing the

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[161] Bertalanffy, *General Systems Theory: Foundations, Development, Applications*, 154.

[162] SAMS, *Art of Design: Student Text*, 53.

[163] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 74.

[164] Alex J. Ryan and Daniel Bilusich, "Complicated Or Complex," (2007), 1.

[165] Ibid.

[166] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 74.

system to become unpredictable because one component will change through interdependence of the behavior of another component.[167]

According to Axelrod and Cohen, "complexity research does not make detailed predictions. Rather, it is a framework that suggests new kinds of questions and possible action."[168] Complexity is hard to predict, not due to randomness but because it cannot always be explained. Among the different fields of research on complexity theory, there exists both diversity and recurring themes and patterns.[169] All of this research is centered on the emergence of different parts of these systems. Neil Johnson defines the science of complexity as "the study of the phenomena which emerge from a collection of interacting objects."[170] Jamshid Gharajedaghi gives a slightly different definition "Complexity is a relative term. It depends on the number and nature of interaction of variables involved."[171]

Complexity theory is linked to history because of the interdependency of variables in science, which is much like history.[172] Complexity theory and history are intertwined because they both look at linear and nonlinear patterns that exist and are emerging as well as things that are both predictable and unpredictable.[173] However, Clausewitz gives us a valuable warning. "History is a dynamic process of change, driven by forces beyond the control and often beyond the comprehension of any individual or group."[174]In the following sections the key components of complexity will be elaborated on as they applied to the historical case study of Lieutenant General Matthew Ridgway during the Korean War.

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[167] Ryan and Bilusich, *Complicated Or Complex*, 2.

[168] Axelrod and Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier*, 19.

[169] Ibid., 17-18.

[170] Johnson, *Simply Complexity: A Clear Guide to Complexity Theory*, 3-4.

[171] Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity, A Platform for Designing Business Architecture* (London: Elsevier, 2006), 112,114-116.

[172] Gaddis, *The Landscape of History: How Historians Map the Past*, 76.

[173] Ibid., 78.

[174] Bassford, *Clausewitz and His Work.*

Complexity Theory as it Applies to "Understanding"

Based on the case study of Ridgway's actions in Korea, the key components of complexity theory that enabled him to understand the environment were: interdependence, emergence, and unintended consequences. Ridgway interacted with multiple actors in a very robust organization and was constantly dealing with emergent behaviors causing unintended consequences, such as conducting offensive operations in January1951 to gain the initiative which inadvertently caused the ROK Army too retreat in mass, because of a few units breaking under pressure of a CCF counter-offensive. Although not specifically talked about with in this section variety and diversity are an intrical part of interdependent agents and will be seen throughout this section.

Part of interdependence is the interaction amongst different actors. The more complex a system is, the more reliant the actors become upon each other.[175] To understand interdependency, one must look at systems that allow one element to be seen as part of the larger environment and analyze the role it plays in the overall system.[176] Interdependence creates linkages, which are connections to other actors in the system. Components may have connections with multiple parts, making them act differently. In order to find the connections within a system, one must define the central characteristics and emergent properties or as Gharajedaghi phrases it, look for "second order machines" in the system.[177] One of the outcomes of recognizing interdependence is that it shows how actors in the system are connected and interdependent, which then form patterns that can be observed to gain a greater understanding of the whole environment.

Complex systems are constantly changing through the emergence of novel patterns, which are sometimes orderly and at other times disorderly. Patterns can be used to understand complex behavior: "systems display related activities that are interrelated patterns that can be analyzed and assessed in order

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[175] Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity, A Platform for Designing Business Architecture*, 15.

[176] Ibid., 16.

[177] Ibid., 137.

to observe future behavior."[178] Patterns may be observed that are predictable or unpredictable, but one must realize that any inputs into the system will also change the system.[179] Actions form patterns over time and it is these patterns that can be observed to gain an understanding of the environment.[180]

Alex Ryan defines emergence as "the process whereby the assembly, breakdown or restructuring of a system results in one or more novel emergent properties."[181] One of the key components of complexity is the novel emergence that changes interactions between agents. Complex adaptive systems are one way the military is learning from its past experiences, while taking into account emerging living systems' continued impact on the environment.[182] Philip Anderson said "Complex adaptive systems can evolve when new agents or schemata are introduced."[183] One of the key components of the complex adaptive system is emergent behavior, which can be altered by changing the landscape and the demographics of the organization, causing a pattern shift in the behavior.[184] Donovan Fuqua states that, "The behavior is referred to as emergent when the result of the system cannot be inferred through an examination of the individual components."[185] One of the key concepts of complex adaptive systems is that they have emergent novelty, which causes surprise and point toward war being unpredictable due to

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[178] Everett C. Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*, Vol. 6 (London; New York: Frank Cass, 2005), 94.

[179] Ibid., 100.

[180] Ibid., 102.

[181] Alex Ryan, "Emergence is Coupled to Scope, Not Level," *Complexity* 13, no. 2 (2007), 10 (accessed 19 October 2010).

[182] Antoine Bousquet, "Chaoplexic Warfare or the Future of Military Organization," *International Affairs* 84, no. 5 (09, 2008), 924.

[183] Philip Anderson, "Complexity Theory and Organization Science," *Organization Science* 10, no. 3 (May, 1999), 225.

[184] Ibid., 229

[185] Donovan O. Fuqua, *Understanding the Role of Chaos Theory* (Fort Leavenworth, KS: US Army Command and General Staff College, 2009), 27.

its uncertainty nature.[186] Interestingly, maneuver warfare is inherently complex because of its

decentralized execution and emergent operations based on exploiting uncertainty on the battlefield.[187]

Unintended consequences are those emergent properties arising from action in addition to the

intended consequences. Interdependence implies that every interaction with the system will have more

than one effect. Dietrich Dörner in his book *Logic of Failure* gives a good explanation of unintended

consequences. "A system of variables is 'interrelated' if an action that affects or is meant to affect one

part of the system will also always affect other parts of it. Interrelatedness guarantees that an action aimed

at one variable will have side effects and long-term repercussions."[188] Emergence and interdependence

also causes unintended problems, based on solving one issue only to find out that it created a new

problem.[189] An example of unintended consequences in the Korean War was Macarthur's attack up to the

Yalu River, which was successfully achieving the intended effect of driving back the North Korean

forces, but became overwhelmed by the unintended consequence of drawing China into the war.

Complexity Theory as it Applies to "Perception"

Within the framework of understanding, perception, and approach, Ridgway's analysis of

events are related to three sub components of complexity theory: scale, adaptive leadership, and bottom

up feedback from the agents (the soldiers in the field). These are all key sub components of complexity,

which enable us to adapt to the environment. Ridgway's perspective changes as he moves around the

battlefield interacting with soldiers at the tactical level and with politicians and Army leadership at the

strategic level. Gaddis in his book *The Landscape of History* argues that depending on where one stands

on a landscape the view is slightly different, but that all the views are accurate depictions of reality.[190]

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[186] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 76.

[187] Alex J. Ryan, "Military Applications of Complex Systems,"748.

[188] Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and what we can do to make them Right* [Logik des Misslingens.], 1 American ed. (New York: Metropolitan Books, 1996), 38.

[189] Ibid., 52.

[190] Gaddis, The Landscape of History, 1-2.

The scale of observation influences what patterns are perceived within a complex system. Alex Ryan in his article "The Foundation for an Adaptive Approach" says that, "complex problems could be defined as those problems that cannot be solved at a single scale. They require coordination, multiple perspectives, and a systematic response because cross-scale effects interlink problems at different scales."[191] If complex problems span multiple scales, then we can infer that successful commanders will integrate multiple perspectives at different scales of observation as they make sense of the operational environment. In doctrinal language, battlefield circulation is the method commanders use to understand the environment at multiple scales. Ronald Heifetz, in his book *Leadership Without Easy Answers,* speaks of the need for a leader to remove themselves from the stage and move to a position where they can observe the entire system, using the metaphor of the balcony as an elevated perspective to identify systemic patterns.[192] This enables them to have a more holistic understanding of the environment and its interdependencies, diversity, connections and emerging trends. This effect could be seen within the historical case study prior to when Ridgway took command of the Eighth Army. By virtue of his position as Deputy Chief of Staff of the Army, Ridgway was one step removed from the action. This broader perspective may have helped Ridgway to look at the Korean conflict differently from those that were directly involved. Part of this broad perspective was his ability to work with many diverse actors including heads of state, foreign subordinates, foot soldiers, and leaders with different views. There are many different parts that make up the whole system, none of which look alike. Diversity comprises no fixed measure as it constantly varies in shape and size. It creates robustness through variation of measures, entropy through a distribution across types, distance between pair types (apples versus oranges), and lastly is the total number of attributes between types.[193] Ridgway's understanding of

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[191] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 77.

[192] Ronald A. Heifetz, *Leadership without Easy Answers* (Cambridge, Mass.: Belknap Press of Harvard University Press, 1994), 260.

[193] Page, *Understanding Complexity*, Chap 4.

difference and distance (perspective) enabled him to see the complexities involved in the broader strategic context, which must have influenced his perspective once he took command.

Within complexity theory, one of the major components is the bottom-up feedback from different actors that is caused by emergence and creates novelty. Leaders are part of a complex system that deals with bottom up feedback through emergence, novelty and the constant variance of the environment.[194] According to Russ Marion and Mary Uhl-Bien, "Complexity provides a bottom up model of emergence, with Complex leaders bonding (direct) and enabling (indirect) rather than controlling the interactive dynamics that lead to creativity and fitness."[195]

Complexity Theory as it Applies to the "Approach"

"Through learning we re-create ourselves. Through learning we become able to do something we never were able to do."

—Peter Senge[196]

The third set of components of complexity theory that are specific to the case study are the approach to solving complex problems, which include: use simple rules; interact iteratively with the system to learn; and emphasize the ability to adapt to changing environmental conditions. After Ridgway made his initial inspection of the frontline he instituted simple rules based on his interactions with multiple actors within his organization and the enemy, which enabled him to adapt to the constantly changing combat conditions.

Principles and rules allow us to bound ill-structured problems and make them simpler in order to manage the complexity. Steven Wolfram's work with simple rule sets that illicit complex behavior indicates that simplicity can be used to answer very complex problems as long as they are bound by rule

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[194] Russ Marion and Mary Uhl-Bien, "Complexity v. Transformation: The New Leadership Revisited" (Ft. Meyers, Florida, Presented at Managing the Complex IV--Conference on Complex Systems and the Management of Organizations, December, 2002), 12-13.

[195] Ibid., 17.

[196] Peter M. Senge, *The Fifth Discipline: Strategies and Tools for Building a Learning Organization* (New York: Currency, 1994), 14.

sets.[197] Wolfram's counter-intuitive insight is that "it ultimately takes very simple rules to produce behavior of great complexity."[198] Increasing complexity does not necessarily mean that the behaviors become more complex. "This may also mean that even with a high degree of complexity there may be simple behaviors that occur. Just because a system does not seem complex it may have patterns that form and are nested together by a simple behavior or rule set."[199] Everett Dolman, applying Wolfram's insights to military strategy, argues that to observe complexity through simplicity it must be constrained: "the power of the rules is not that they force behavior but that they constrain and shape it."[200] It is the strategic decision maker who decides how to constrain the problem based on the environment by using principles as a guide that enables action, while using rules to prescribe actions.[201]Dolman argues "The behavior of complex adaptive systems can be explained by an individual agent's adherence to the simple rules, but the rules that guide behavior of individual agents can not manifest themselves at higher levels."[202]

Learning is fundamental to adaption and to addressing constantly changing complex environments. The Australian Army is using Adaptive Campaigning as a means of learning through action. By stimulating the system the Australians are able to see, then decide, and learn to act through adaptation, a process which emphasizes that "every action is a learning opportunity."[203] The U.S. Army Capstone Concept talks about learning through action:

> developing the situation through action requires understanding the situation in depth, breadth, and context; acting; assessing and adapting tactical and operational actions; consolidating gains; transitioning between tasks and operations; and, ultimately, being prepared to transition responsibility.[204]

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[197] Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*, 118.

[198] Stephen Wolfram, *This New Kind of Science* (Champaign, IL: Wolfram Media, 2002), 106.

[199] Ibid., 105.

[200] Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*, 77.

[201] Ibid., 77.

[202] Ibid., 87.

[203] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 86.

[204] *TRADOC Pamphlet (Pam) 525-3-0, the Army Capstone Concept, Operational Adaptability: Operating Under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict. 2016- 2028.* (Fort

Everett Dolman argues, "Complex adaptive systems continuously organize and reorganize the patterns of internal connections in such a way that a form of learning can be discerned."[205] In short, the military of all organizations, must "adapt or die" through a cycle of interacting with the environment and implementing lessons learned.[206]

Systems change constantly, forcing agents within them to adapt because old strategies no longer work. Within complex adaptive systems, "variety within a population is a central requirement for adaptation."[207] The different agents within a system are constantly changing their strategies, which forces other agents to adapt to these factors. Adaptation is a means of dealing with complexity by assessing tradeoffs in a multi-dimensional space.[208] Military operations should not focus on breaking things down to predictable functions, but should adapt to exploit the uncertainty and unpredictability found in war.[209] Complex systems can be used to understand and adapt to the environment through systems thinking and can shed light on limits of our knowledge.[210] The ability to work with complex systems is to see the patterns that form through multi-scale analysis from interdependencies that have novel emergent properties and that adapt to fit the environment over time.[211] Learning and adaptation through assessment are part of the commander's role in Battle Command, were once the system has been stimulated and a reaction has occurred it causes an actor to adapt to the new changes. "Commander and staff are attentive to patterns that enable them to discern enemy intent and emergent consequences with the least amount of

Monroe, VA: Department of the Army Headquarters, United States Army Training and Doctrine Command, 2009), 17.

[205] Dolman, *Pure Strategy: Power and Principle in the Space and Information Age*, 110.

[206] Ryan, *Military Applications of Complex Systems*, 773.

[207] Axelrod and Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier*, 32.

[208] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 80-84.

[209] Ryan, *Military Applications of Complex Systems*, 759.

[210] Ibid., 761.

[211] Ibid., 762-765.

information, using the known pieces of the operational puzzle to sense those that are missing." as part of the learning and assessing process in Battle Command.[212]

As we transition from the study of complexity theory to military theory, one must understand that the theories are linked by systems analysis. A systems understanding "recognizes that our environment is made up of multiple interconnected systems and subsystems. The critical variables in a system are those that interact mutually with a large number of variables within the system," according to Gary Luck.[213] Carl von Clausewitz is linked to complex adaptive systems through his understanding of the uncertainty and unpredictability of war that stems from the interactions of actors in the system; the friction that is created from these connections; and the role chance plays in war.[214]

Military Theory

> "Understanding how military theory spreads and is adopted can be as important as understanding the theory itself."
>
> —Christopher Bassford

There are many studies on military theory, however, this monograph, concentrates on doctrine, past doctrine, and theories that are relevant to complexity and that Ridgway would have been familiar with. In this document Battle Command is the framework in which to look at the case study and how it ties to complexity theory. Within the commander's role, we will focus on all the key components of: understanding, visualizing, describing, directing, learning and assessing of the battlefield in order to understand how Ridgway made his decisions. These aspects of Battle Command enable commanders to observe and deal with complexity in the environment. One of the new military concepts dealing with complexity is "Adaptive Campaigning" developed by the Australian Army, which will be covered in this

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[212] *TRADOC Pam 525-3-3, the United States Army Functional Concept for Mission Command 2016-2028* (Fort Monroe, VA: Department of the Army Headquarters, United States Army Training and Doctrine Command, 2010), 19.

[213] Gary E. Luck Jr, *Conceptual Leadership Skills for the Twenty-First Century, A Means of Dealing with Complexity, Ambiguity, Uncertainty, and Speed* (Fort Leavenworth, KS: US Army Command and General Staff College, 1998), 18.

[214] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 75.

section. The military theory section will also explore some of the linkages of the major theorist that General Ridgway was exposed to or influenced by, Carl von Clausewitz. Clausewitz's works in the late 1800s had elements of complexity intertwined within his magnum opus *On War*. Lastly, this section will touch on the operational doctrine Ridgway had seen during his formative years in the Army prior to World War II.

Some conceptual skills needed at the strategic and operational level include the abilities to harness creative and critical thinking. In order to understand the complex and dynamic environment that our leaders work in, they must translate this knowledge into a vision that addresses the ambiguity and uncertainty of our times.[215] These conceptual skills enable our leaders to address ill-structured and complex problems and identify patterns, relationships, and trends.[216]

Theory Defined

Clausewitz stresses the importance of theory in his book *On War,* "a working theory is an essential basis for criticism."[217] The SAMS *Art of Design* student text argues that theory enables a practitioner through "highly compressed insight into how something works, theories are tools that provide practitioners with a great source of leverage."[218]Theory gives us a framework in which to base an idea and a means to explain a thought.

Doctrine

> "Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application."
> —Joint Publication 1 -02

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[215] Luck, *Conceptual Leadership Skills for the Twenty-First Century, A Means of Dealing with Complexity, Ambiguity, Uncertainty, and Speed*, 19-20.

[216] Ibid., 22.

[217] Clausewitz, *On War*, 157

[218] SAMS, *Art of Design: Student Text Version 2.0*, 33.

Doctrine provides the military with a common frame of reference and language while ensuring a unity of effort. The SAMS *Art of Design: Student Text Version 2.0* argues that "doctrine does not self limit creativity in military operations but serves as a common foundation."[219]In other words, doctrine gives the practitioners the tools to operate as a cohesive unit.

Ill-structured problems or wicked problems are continuously evolving (i.e. they are embedded within complex adaptive systems), tied to other problems, and have limited solutions. Major David McHenry argues, "Battle Command provides a solution-focused approach to addressing ill-structured problems."[220]First it provides a framework for iteration and reflection on the problem and solution; next it allows for visualization of the problem creating awareness; and finally it allows for an opportunity to assess the changes to the environment caused by putting energy into the system.[221] Because of the complex world we live in, ill-structured problems exist and must be dealt with through a structure that is complex in itself, Battle Command offers us a tool in which to deal with this complexity by observing the system and then acting on that understanding.

Field Manual (FM) 3-0 defines Battle Command as:

> the art and science of understanding, visualizing, describing, directing, leading, and assessing forces to impose the commander's will on a hostile, thinking, and adaptive enemy. Battle Command applies leadership to translate decisions into actions by synchronizing forces and war fighting functions in time, space, and purpose to accomplish missions.[222]

Understanding is central to a commander's decision making because it provides information in a framework in which to operate. Visualization allows the commander to use the knowledge he has gained to see the battlefield as it unfolds.

The Army field manuals describe the interaction of the different components, such as FM 3-0, "Maintaining understanding is a dynamic ability, a commander's situational understanding changes as an

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[219] SAMS, *Art of Design: Student Text Version 2.0*, 35.

[220] McHenry, *Battle Command: An Approach to Wickedness*, 42.

[221] Ibid., 43-47.

[222] *FM 3-0 2008: Operations* (Washington, D.C.: U.S. Department of the Army, 2008), Para 5-9.

operation progresses. Relevant information fuels understanding and fosters initiative. Greater

understanding enables commanders to make better decisions. It allows them to focus their intuition on

visualizing the current and future conditions of the environment and describe them to subordinates."[223]

FM3-07 describes the interaction of understanding and visualization "For every operation, commanders

develop personal, detailed understanding of the situation and operational environment. They then

visualize a desired end state and craft a broach concept of shaping the current conditions toward that end

state."[224]

Visualization allows the commander to make a mental image of his understanding and put that

into a sequence of events that achieve his mission. He does this by looking at the factors of mission,

enemy, terrain and weather, troops and support available, time and civil (METT-TC) consideration, to

give him a framework from which to operate. Visualization is a continuous process that has to adapt to

the ever-changing operational environment. FM 3-0 says this about the commander's visualization, "it is

the mental process of developing situational understanding, determining a desired end state, and

envisioning the broad sequence of events by which the force will achieve that end state."[225]

Understanding and visualization are central to operational art because of the role they play in an

operational level commander's comprehension. FM 3-0 states:

> When applying operational art, collaboration informs situational understanding. This
> collaboration involves an open continuous dialog between commanders that spans the levels of
> war and echelons of command. This dialog is essential to reducing the tension inherent to
> command and control across the levels of war. It is vital in establishing a common perspective on
> the problem and a shared understanding of the operational environment's conditions.[226]

FM 3-0 ties understanding to visualization and operational art:

> Operational commanders need to project their visualization beyond the realm of physical combat.
> They must anticipate the operational environment's evolving military and nonmilitary conditions.

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[223] Ibid., Para 5-17.

[224] *FM 3-07 2008: Stability Operations* (Washington, D.C.: U.S. Department of the Army, 2008), Para 4-1.

[225] *FM 3-0 2008: Operations*, Para 5-19.

[226] Ibid., Para 6-21.

Operational art encompasses visualizing the synchronized arrangement and employment of military forces and capabilities to achieve the strategic or operational end state…[227]

Understanding enables us to see the environment from different worldviews while visualization allows a commander to anticipate conditions needed to achieve success on the battlefield.

FM 6-0 combines the art of command and science of control through looking at visualization of the battlefield describing the commander's mental picture of the battlespace, and finally, translating that image into action. Within FM 6-0, situational understanding is described as, "Before commanders visualize an operation, they form a clear understating of the situation, organized in terms of METT-TC."[228] Visualization happens through the following: "Military operations never take place in a vacuum; they always occur within a context. Commander's visualization begins with an already established situational understanding. Visualization is the commander's essential means of assessing throughout the operations process."[229] Understanding and visualization allow a commander to manage uncertainty or as Carl von Clausewitz states, the fog of war through refining and assessment of conflicting information.

Although this study does not focus on the other elements of Battle Command (decide, direct, learn and assess), it does touch on how these components effect leaders decisions. FM 3-0 describes these key components:

> Commanders describe their visualization through the commander's intent, planning guidance, and concept of operations in a way that brings clarity to an uncertain situation … command; commanders direct actions to achieve results and lead forces to mission accomplishment … Effective battle command requires commanders to continuously assess and lead. Assessment helps commanders better understand current conditions and broadly describe future conditions that define success.[230]

Ridgway uses these components to express his vision, observe and supervise its execution, and then assess the environment and adapt through learning and implementing change.

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[227] Ibid., Para 6-22.

[228] *FM 6-0: Mission Command: Command and Control of Army Forces* (Washington, DC: U.S. Department of the Army, 2003), Para 4-6.

[229] Ibid., 4-2.

[230] FM 3-0, para 5-13-5-14.

Interwar Doctrine a Historical Perspective

The operational doctrine that Ridgway was familiar with from either his education or his experiences in different assignments includes the Field Service Regulations in the interwar period. The 1923 Field Service Regulation 100–5 Operations manual was very prescriptive in detailing the physical conditions needed to fight on the battlefield for each branch of the service, the key components of combat operations, and administrative actions. It set basic principles for a combined arms force using combat tactics to fight wars against an opponent who was organized for modern warfare. The doctrine did not account for the human element in war and was prescriptive in how it approached conflicts of modern (relative) armies fighting one another.[231]

There was a significant change in the operations doctrine just prior to World War II in which some elements of Clausewitz are readily apparent and give the operational planner a more conceptual tool to work with. The 1939 FM 100–5 Tentative Field Service Regulation and the 1941 FM 100–5 Field Service Regulation Operations looked at friction, chance, morality, and unpredictability as part of the battlefield framework. These manuals were similar to the 1923 Field Service Regulation in that they also provided physical calculations as a guide to successfully winning campaigns. The 1939 and 1941 manuals gave commanders on the ground more freedom of action in order to allow them to maneuver their combined arms team on the battlefield. In many ways, Jomini had influenced doctrine writers through his established principles and his focus on the science of warfare, but it is Clausewitz who gave doctrine writers the tools to better understand the complexities of war. As with all doctrine it was used as a guide and not a rulebook on how to fight a war. The last two Operations manuals printed prior to World War II had influenced Ridgway as an operational planner in the War Plans Department (WPD) and later how he fought in World War II, which ultimately altered his actions as the Eighth Army commander in 1951.[232]

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[231] *Field Service Regulations* (Washington, D.C.: U.S. G.P.O., 1923), 201.

[232] *FM 100-5 1939; Tentative Field Service Regulations Operations*, Reprint ed., 1939).

Adaptive Campaigning

> "Indeed, the ability to adapt is probably most useful to any military organization and most characteristic of successful ones, for with it, it is possible to overcome both learning and predictive failures."
>
> —Eliot Cohen and John Gooch, *Military Misfortunes*[233]

The Australian Army is currently using the concept of Adaptive Campaigning to deal with the complexity of the modern battlefield. This doctrine looks at a complex situation by stimulating it and then adapting to its response using an Act-Sense-Decide-Adapt (ASDA) cycle as the method of implementation.[234] In many ways Ridgway's actions are consistent with the ASDA. When he took command, Ridgway changed the dynamics of the battlefield by making commanders stay in contact with the enemy, sensing enemy responses, maneuvering units to exploit success, and finally adjusting to changing conditions. By gaining and maintaining the initiative, Ridgway instilled a proactive adaptive approach in an army that had previously been largely reactive to enemy action.

Carl von Clausewitz

> "War is thus an act of force to compel our enemy to do our will."
>
> —Carl von Clausewitz, On War[235]

One of the theorists General Ridgway would have read during the interwar period was Carl von Clausewitz. Clausewitz, in his book *On War,* presents one of the earliest historical and theoretical studies to anticipate complexity theory by emphasizing the role of chance (unpredictability), fog (uncertainty), and friction (entropy) in war. Thermodynamics in the military context is the channeling of energy into war, which Clausewitz saw as the unpredictable nature of war through friction and fog in military operations.[236] He has also been one of the earliest theorists to look at limited war as a conflict of extremes

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[233] Eliot Cohen and John Gooch, *Military Misfortunes: The Anatomy of Failure in War*, 94

[234] Ryan, *The Foundation for an Adaptive Approach: Insights from the Science of Complex Systems*, 86-87.

[235] Clausewitz, *On War*, 75

[236] Bousquet, *Chaoplexic Warfare or the Future of Military Organization*, 921.

distinct from the theory of war. Some of his critics have argued that his theories revolving around the Westphalian structure in modern times are not relevant because of non-state actors. Clausewitz was able to address complexity by showing that there was fog (uncertainty), friction, unpredictability through nonlinearity, violence, chance, the human element, and policy in war that caused constant change within the operational environment.

Christopher Bassford, critical of common misinterpretations of the Clausewitzian trinity, explains the trinity as follows. "Clausewitz defines the components of the trinity as (1) primordial violence, hatred, and enmity; (2) the play of chance and probability; and (3) war's element of subordination to rational policy."[237] This enables a reader to draw a conclusion on the many unknowns that we must deal with when operating within a system. Clausewitz's description of the "…interaction between the elements of the trinity leaves out the fact, strongly emphasized elsewhere in *On War*, that war is always an interaction between opposing *groups*. That is, this trinity exists on all sides of any conflict, thus further complicating the picture."[238] Bassford then summarizes the importance of the trinity.

> One can identify all of Clausewitz's most profound insights with one or another element of the trinity. The component dealing with violence and emotion (irrational forces) relates directly to his discussion of moral forces in war and the proposition that war is distinguished from other forms of human interaction by its resort to organized violence. The component dealing with chance and probability (non-rational forces) reflects his ideas about the role of military genius and the creative spirit in dealing with the fog and friction of war; operational ideas like the "enter of gravity" also relate to this aspect of the trinity. The component dealing with war's subordination to policy (rational forces) relates to his ideas about the relationship between ends and means, war as the continuation of policy, and the dichotomy between "real war" (whether limited or unlimited) and "absolute war." Thus we can see that, in this one, briefly described concept, Clausewitz unified many of the ideas he developed over thirty-plus years of studying the nature of war.[239]

Clausewitz wrote on military history, theory, and practice, specifically focusing his critiques on those theorists that over-simplified war to physical properties or principles, such as Jomini. Although the two theorists have much in common, their difference is that Clausewitz was looking for a conceptual

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[237] Christopher Bassford and Edward Villacres, "Reclaiming the Clausewitzian Trinity," *Parameters* Autumn (1995), 9.

[238] Ibid., 15.

[239] Ibid., 18.

theory of war while Jomini was looking for a prescriptive way of waging war according to geometric principles.[240]

> Both approaches isolate manageable parts of the single whole that 'war' represents. In doing so, and interrelating them with each other, one gains different insights about the possible causes and resulting effects in order to explain what the fundamental nature of war is; why, how and for what purpose war is fought; how peace can be brought about and finally, how war can be prevented.[241]

However, these differences made Clausewitz's theories on war more enduring over the last two centuries since they are not tied to physical or geometric lines as Jomini's principles of war are more inline with the power of science. Jomini tried to reduce war to a set of formulas that could be followed by any leader, which was a form of reductionist thinking. Clausewitz stated "to reduce the whole secret to war to a formula of numerical superiority at a certain time and place was an over-simplification that would not stand up against the realities of life."[242] Clausewitz decried those who relied on this formulaic thinking: "They direct the inquiry exclusively towards physical quantities, whereas all military action is intertwined with psychological forces and effects. They consider only unilateral action, whereas war consists of a continuous interaction of opposites."[243] Principles in war do not take into account the chance, friction and uncertainty where "Everything in war is very simple, but the simplest thing is very difficult."[244] Clausewitz was a realist who believed that one must understand theory but that practice was the true test of war. He said, "From the abstract to the real world…the whole thing looks different."[245] He also believed there was no one way to fight a war because of its unpredictable nature. Clausewitz has become the dominant theorist on war because his arguments on the nature of warfare have retained their

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[240] Thomas J. Hench, "Clausewitz Vs. Jomini: Putting "Strategy" into Historical Context," *Academy of Management Proceedings* (08, 2009), 1.

[241] Christoph Abegglen, "The Influence of Clausewitz on Jomini's Précis De l'Art De La Guerre" (MA in War Studies, King's College, London, 2003), 24-25.

[242] Clausewitz, *On War*, 135.

[243] Ibid., 136.

[244] Ibid., 119.

[245] Ibid., 87.

utility since he developed them in the late 1800's. In many ways, he was well ahead of his time in understanding the complexities of war.

Carl von Clausewitz wrote: "The occasion is always due to some political objective. War is therefore an act of Policy."[246] He understood the complexity of war in having to deal with political maneuvering to maintain power and the military role in execution of policy. Clausewitz anticipated pieces of complexity; specifically, interdependence and emergence when he talked about how societies influence politics and are the reason countries go to war, an example of this is the American populace outrage at being attacked by the Japanese in 1941. He believed that in war there will be ill-structured problems that emerge because human beings are involved. This dynamic environment causes the problem to constantly change, which affects how all the interdependent parts of the whole system adapt. The following statement by Clausewitz illustrates this "no actor in armed conflict, past or present, has been able to escape the influence of chance and luck", which show how novel emergence plays a key role in war.[247] Society and policy drive the use of military force in war, which encompass moral factors and the adaptive human psychological element in the decision making process. "Violence, chance, and rational purpose are timeless principles of war, and due to the variable nature of their relationships to each other, able to describe an infinite variety of conflicts."[248]

One of Clausewitz's links to complexity is his study of nonlinearity in war. Alan Beyerchen defines nonlinear systems as independent variables that when put together do not equal the sum of the whole. Whereas linear systems can be broken down into smaller parts, which are then individually resolved, and when put back together, deal with the problem successfully.[249] In war, Clausewitz sees

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[246] Ibid., 607.

[247] Bart Shuurman, "Clausewitz and the "New Wars" Scholars," *Parameters* 40, no. 1 (2010), 95.

[248] Ibid.

[249] The principle of proportionality means that if f is a function or an operator, a is a constant, and u is the system input (either a variable or itself a function), then $f(au) = af(u)$. A more precise way of stating the principle of additivity is that the effect of adding the system inputs together first and then operating on their sum is equivalent to operating on two inputs separately and then adding the outputs together, so that $f(u_1 + u_2) = f(u_1) + f(u_2)$. If f does not meet both of these conditions, it is nonlinear. In effect, if a system can be described adequately by the mathematical

interactions of opponents, driven by psychological forces and the patterns that are created between and around them, all of which are nonlinear because of the human element involved. Feedback is an inherent part of war and is directly linked to the context of involvement. An example of this would be the way politics interacts with the military and how the change in the environment causes change in policy. Part of Clausewitz's understanding of nonlinear systems can be seen in his interpretation of interactions, friction (noise and dissipation of energy in the system) and chance (fog) and their unpredictable nature. [250]

Clausewitz understood that part of nonlinear warfare was the friction, "This tremendous friction, which cannot, as in mechanics, be reduced to a few points, is everywhere in contact with chance, bringing about the effects that cannot be measured, just because they are largely due to chance."[251]In addition, these organizations are extremely complex with interdependent parts that are unpredictable. "He described war as a true chameleon, and each war having laws peculiar to itself." [252] "He repeatedly emphasized how simple tasks in war are, but how complex the interaction, friction, and realities become in performing them,"[253] due to the human moral and psychological qualities involved.

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operations of addition, subtraction, multiplication by a constant, integration with respect to time or differentiation with respect to time, it can appropriately be thought of as linear. If it is necessary to multiply or divide variables by each other, raise to powers, extract roots, or integrate or differentiate with respect to dependent variables (that is, variables other than time), then the system is nonlinear. Alan Beyerchen, "Clausewitz, Nonlinearity, and the Unpredictability of War," *International Security* 17, no. 3 (Winter, 1992-1993), 62.

[250] Ibid., 72-78.

[251] Clausewitz, *On War*, 120.

[252] Hew Strachan and Andreas Herberg-Rothe, *Clausewitz in the Twenty-First Century* (Oxford ; New York: Oxford University Press, 2007), 54.

[253] Ibid., 56.

Comparative Analysis of Theory to Practice

"Share our similarities, celebrate our differences."

—M. Scott Peck

This monograph's hypothesis is that comparative analysis between the case study of Lieutenant General Ridgway in the Korean War and complexity theory will provide insights into how theory and practice are interrelated in understanding, visualizing, describing, directing, leading, and assessing in complex situations. There are many similarities between complexity theory, military theory, and the case study of General Ridgway. However, there are some differences based on the circumstances, environment, the education, and General Ridgway's practical experience. Much of General Ridgway's experiences were born out of his education during the interwar period and his practical experiences in South America, Asia, and Europe during WWII. The studies of Clausewitz and Jomini at West Point, CGSC, and the AWC, taught him the theoretical approach of dealing with the complexity he was confronted with during World War II and the Korean conflict. Within each sub section below there is overlap between the major themes of complexity and the historical study.

Understanding as it Applied to Ridgway

Although the study of complexity was not around in the 1930s, one could draw parallels between Ridgway's actions and the fundamental concepts behind the theory. Using Battle Command and theory as the framework to compare the historical case study will highlight where complexity fits into Ridgway's understanding, visualization, and the description of the crisis that he faced. The actions that MacArthur and his subordinates took set the conditions that Ridgway walked into in December 1950. Ridgway had to deal with many actors and issues that were interconnected, interdependent, emergent, and diverse, all in the context of a foreign culture. Ridgway approached these challenges in a different way than his predecessors, leveraging the diverse elements at his disposal into a cohesive fighting unit.[254] He was forced to adapt the Eighth Army to the conditions, to improve their morale and actions, in order to

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[254] Eden, *Transformational Leadership in Wartime*, 17-18.

bring the fight to the enemy. Ridgway's operational environment was extremely complex. His nuanced

understanding of the operational environment matched this complexity, yet his operational approach was

to impose simple rules based on his perceptions of the environment.

Ridgway's ability to interact with many nations under his command at different levels enabled

him to change the mindset from a defeatist position to that of a positive and aggressive army. He

immediately reached out to all of his coalition partners to find out what they needed and what capabilities

they offered. Once he had done his initial review of his forces, Ridgway ensured that they were all

mutually supporting each other and that their needs were met, such as country-specific foods.[255] In

addition, he also saw to it that the interdependence of the different echelons spoke as one voice by forcing

commanders at higher levels to be integrated with the soldiers at the tactical level. He made sure that the

political and military leadership of all the United Nations forces were directly linked to battlefield success

and he kept them informed through constant contact. Ridgway was always interacting with the system in

order to learn from it through reconnaissance, counter-attacks, and regaining the initiative.

Ridgway had the unique opportunity, as Heifetz puts it, to "stand on the balcony" to observe the war prior

to 1951[256]. This allowed him to gain an understanding of his area of operation from having studied the

ongoing operations in 1950 and by getting a first-hand look at the situation on the ground when he arrived

in Korea. As the Deputy Chief of Staff for Operations for the U.S. Army, he was intimately aware of the

daily reports and gained an understanding of the interdependent nature of politics and conflict, giving him

a holistic view of the situation. Importantly, although he was aware of the developments in theatre, he was

also more detached than the commander at the time, which gave him the broader "balcony" perspective

that Heifetz claims is essential to leading adaptive work. In his job in the War Department, he observed

how the commanders on the battlefield made decisions that had great political ramifications. Ridgway

also understood the force he was employing was very diverse, interconnected, and a robust force from

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[255] Eden, *Transformational Leadership in Wartime*, 21.

[256] Heifetz, *Leadership without Easy Answers*, xi.

multiple countries with different agendas. He knew that he had to change the system or the forces under his command would be destroyed or pushed out of Korea. What the balcony perspective did not offer him though was the real time understanding that commanders on the ground have of the true complexities of the battlefield. However, this was something he compensated for after he was made commander, by seeking the bottom-up feedback from units on the ground. He was also able to draw connections between relevant diverse actors that commanders on the ground could not see. In addition, he was able to study the enemy and the actions taken by his predecessors allowing him to rethink his approach to the conflict as the Eighth Army commander. Ridgway's ability to step back and reflect also enabled him to see the unintended consequences of some of the actions MacArthur and his subordinates were making when they continued to push north towards the Yalu River despite warnings of a Chinese attack. He was able to take the "balcony" perspective and see all the connections holistically, which served him well when he took command of the Eighth Army. Much of Ridgway's learning came from feedback from the system, with all of its variety, diversity, interconnected, and interdependentactors.

Perception as it Applied to Ridgway

General Ridgway was constantly scaling in and out of different echelons in the organization to gain a holistic prospective into the conflict. He operated at the tactical level to gain an understanding of what resource shortfalls the soldiers encountered, and then he looked at the operational level where he observed how the enemy was arrayed and how they were interacting with his forces. He looked at the strategic level to see how his actions were connected to military and political decisions. He moved between the different levels as his operations occurred, allowing him to observe and deal with the complexity in front of him. Occasionally, Ridgway became more focused at one level and lost perspective of others, based on his past experience of the need to be at the decisive point of the battlefield.

Many of his experiences from World War II as well as his education gave Ridgway an offensive mindset. He used the knowledge he acquired about the enemy to change from the defensive posture to an offensive one. His ability to learn from the enemy was the marked difference from his

predecessors who only reacted to what the enemy did. Ridgway's ability to adapt to emerging problems allowed him to conduct the offense and regain the spirit of the Eighth Army. Much of his mindset was based on Jomini's offensive spirit, rather than Clausewitz's assertion that defense was a stronger form of warfare. Ridgway's ability to go on the offensive, see what changed on the battlefield, and then adjust his courses of action is reminiscent of the Australian Army's Adaptive Campaigning doctrine.

Based on written accounts, Ridgway made decisions that enabled him to deal with the complex situation he was in. He understood that every action his forces took could not be done independently of one another for it would have disastrous consequences, just as X Corps operations had for MacArthur earlier in the war. He knew where his forces were weak in the ROK sectors and that they would have to be bolstered by coalition forces. To this end, he also understood that leadership played a huge role in how units fought and operated on the battlefield. As Peter Senge asserts, "people excel and learn, not because they are told to, but because they want to."[257] Of which Ridgway understood all too well as he slowly transformed the Eighth Army into a fighting unit from within.

The Approach as it Applied to Ridgway

One of the ways Ridgway dealt with complexity was by issuing simple rules that commanders on the ground could follow, such as patrols to conduct reconnaissance and maintain contact with the enemy, leading from the front, the use of overwhelming firepower, getting off the roads, and always being mutually supportive in any of their operations. Through simplicity and a set of principles, he was able to encourage commanders to react to the environment under set conditions, resulting in success against an elusive enemy. He visualized the battlefield as unpredictable with emergent properties and based on his battlefield experience in Europe and estimate of the situation, he developed with some simple rules to offset these effects. Further examples of simple rules include orders to go back to the basics of employing overwhelming firepower, extensive dismounted patrolling, and leadership from the front.

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[257] Senge, *The Fifth Discipline: Strategies and Tools for Building a Learning Organization*, 9.

Many of the factors that make Ridgway's historical case study relevant to complexity theory are based on his unique approach to solving his problems in Korea. Unlike his predecessors, whose approach to the Korean conflict was based on a World War II frame and memory of how they fought, Ridgway understood that he was dealing with a different problem and a novel environment. Although he relied on his own experiences, he did not allow them to overshadow his judgment of the present situation. He also understood that he had to change the Eighth Army (the established system) in order to achieve success through learning and action. Ridgway's ability to reflect in action and on action enabled him to gain a firm understanding of the situation he was dealing with.[258]

Lastly and probably, the most important of the similarities was General Ridgway's ability to adapt to the complex environment he was thrust into. First, he changed the Eighth Army's morale by making them believe in themselves and taking an offensive mindset. Second, he changed the tactics used by his force from one of constant retreat and limited contact with the CCF to maintaining constant pressure on their forces through small unit actions. Third, he was dealing with a robust organization that was very diverse so he went down to all the units and began changing them from the bottom-up forcing the organization to adapt. Ridgway changed leadership when he saw that his subordinates, including Regimental, Division, and Corps Commanders, could not or would not execute his orders. He changed the organization of his maneuver units to ensure that they were appropriately structured for the tasks they were given.

The Difference between Complexity Theory and the Ridgway Case Study

The major difference between Ridgway's action and the complexity theory is that of self-organization. Complexity theory indicates that one of its components is the ability for an actor to self-organize without needing direct supervision. Ridgway was the catalyst that forced change within the Eighth Army and he had to constantly push his subordinates to follow his rules verses them organizing

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[258] Donald A. Schön, *Educating The Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*, 1 ed. (San Francisco: Jossey-Bass, 1990), 26.

under him without his direct supervision. This did not happen in most cases, although there was some

self-organization once Ridgway removed key individuals that were blocking bottom-up initiative.

Summary and Recommendations

This paper has looked at the applicability of testing theory against practice using complexity theory and a historical case study. Since theory informs a way of thinking and practice involves doing, they cannot be compared exactly. Theory is the realm of ideals, which are not bound by reality. Practice must deal with the uncertainty, unpredictability, and flux of the real world. Nevertheless, as Clausewitz recognized, history can help demonstrate the application of an idea by enabling reflection on similarities and differences between theory and practice.

Conducting a critical analysis of multiple historical documents of Ridgway in Korea enabled me to observe trends and patterns that occurred that might indicate how Ridgway was thinking. I also looked at complexity theory from multiple perspectives, in order to find the components of the theory that were either similar or radically different from the historical case study. Military theory and doctrine provided a critical bridge between complexity theory and the historical case study to enable the comparison.

The hypothesis for this monograph was that comparative analysis between this case study of Lieutenant General Ridgway in the Korean War and complexity theory would provide insights into how theory and practice are interrelated in understanding, visualizing, describing, directing, leading, and assessing in complex situations. I confirmed this hypothesis, by illustrating how many of the concepts of complexity theory were evident in the decisions General Ridgway made as the Eighth Army Commander during the Korean War. Although neither complexity theory nor the lens of Battle Command was around for Ridgway to use, his actions were consistent with their principles.

To understand some of Ridgway's thought processes and decisions, this monograph examined events prior to his arrival in Korea and traced his professional background, which identified the educational and military experiences that would shape his actions in Korea. This study found that there were more similarities between Ridgway's actions and the prescriptions of complexity theory than

differences. Specifically, similarities were observed in all three categories of Ridgway's understanding, perceptions, and approach to resolving a complex and unique problem.

Limitations to this study and the direction for further research are as follows. First, to fully confirm my hypothesis there would need to be further study to compare Lieutenant General Walker's actions in Korea with complexity theory. This would test the hypothesis that many more differences exist between Walker's approach to the Korean War and the insights from complexity theory, relative to Ridgway. Second, research is needed to look at the Eighth Army as a learning organization, not just its leaders. Comparing the organizational dimensions with complexity theory is worthy of future research. Research to look for counter-examples where a commander operated in accordance with principles of complexity theory and yet the campaign failed, are the third way to illuminate the limitations of complexity theory.

The implication of this research for leaders is that complexity theory can be a powerful tool for overcoming ill-structured problems and learning through adaptation to achieve success. If leaders can look at complexity as a way of being proactive, understanding the environment, learning from it, and then adapting to those new emergent situations with novel ideas, they will be able to work around the problems they are facing. Another tool that will be helpful is the use of historical case studies to compare theory and practice, which maybe a useful approach for leaders to consider. In laying out a historical case study then overlaying it with a theory, history can help to demonstrate the application of a theory in a real world context. This enables the practitioner to see where theory and practice diverge and when they agree, which leads to a deeper understanding of warfare.

Doctrine writers should look at complexity theory and ensure that doctrine accounts for those aspects of the theory that are supported by military history. They can then use examples from history to show the applicability of the theory to current and future problems by studying the past. In addition, training doctrine should look at the implications of using historical case studies as a tool to test theory.

In conclusion, this monograph has shown how a using a historical case study of a successful commander could be compared to complexity theory as a means of viewing its applicability to future

leaders. This papers findings show that complexity theory is readily usable and has a strong correspondence with the actions of at least one successful commander. This shows that theory and history need not be competing approaches to the study of war, but rather comparison of history and theory can provide a richer insight on war than either perspective in isolation.

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